

FIG.1

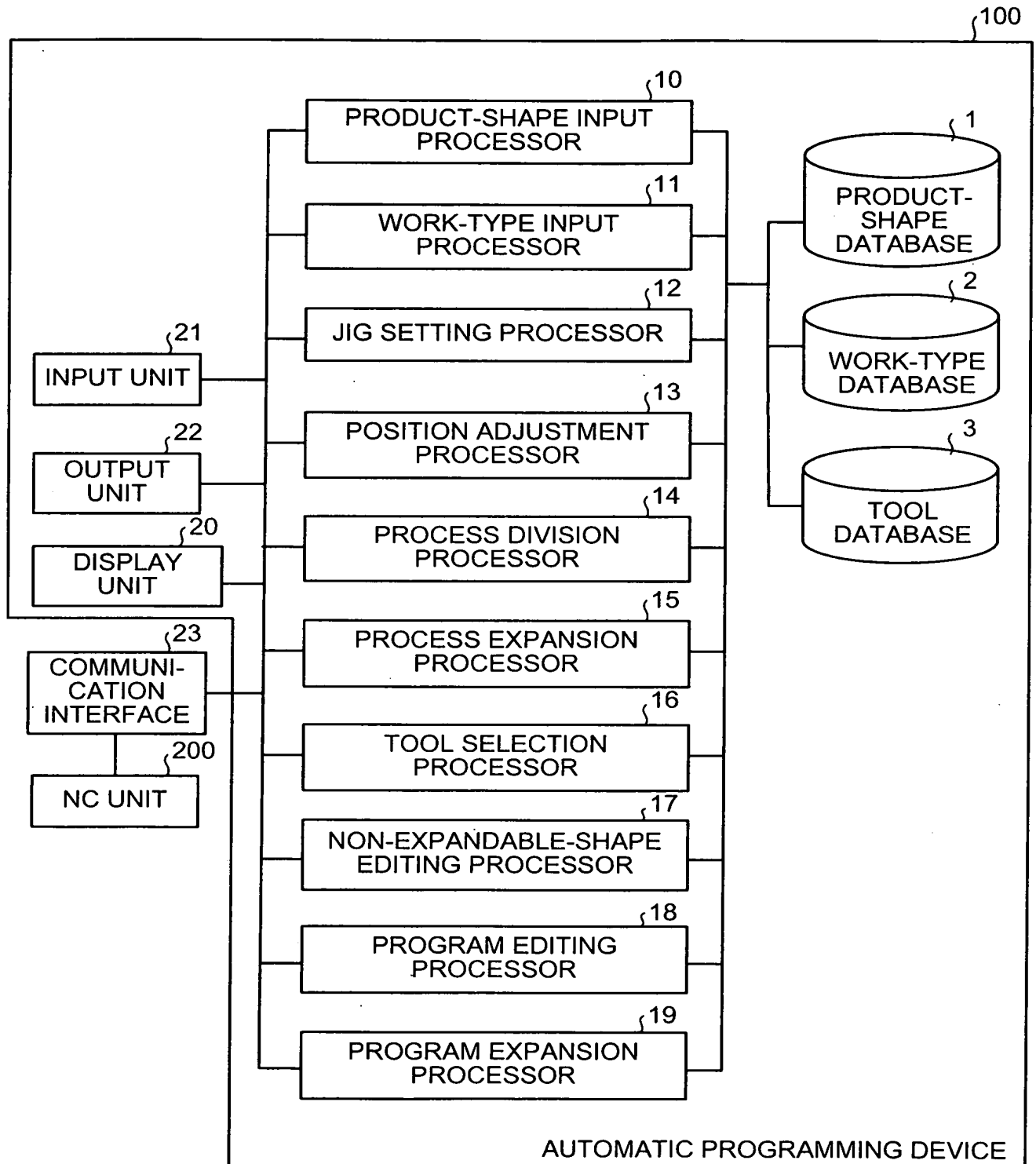
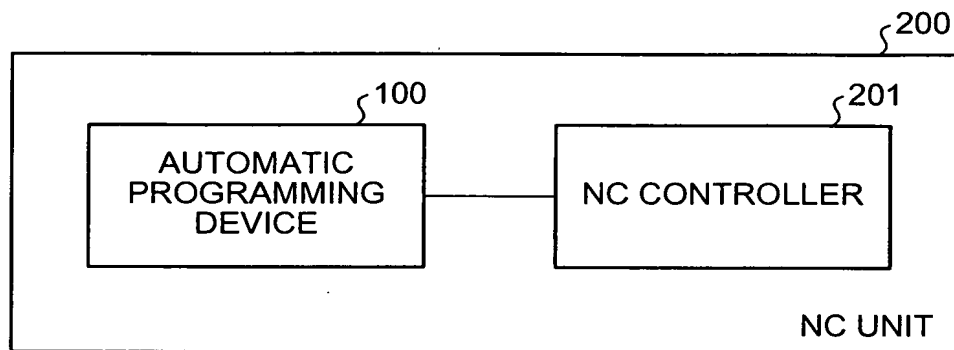


FIG.2



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FIG.3

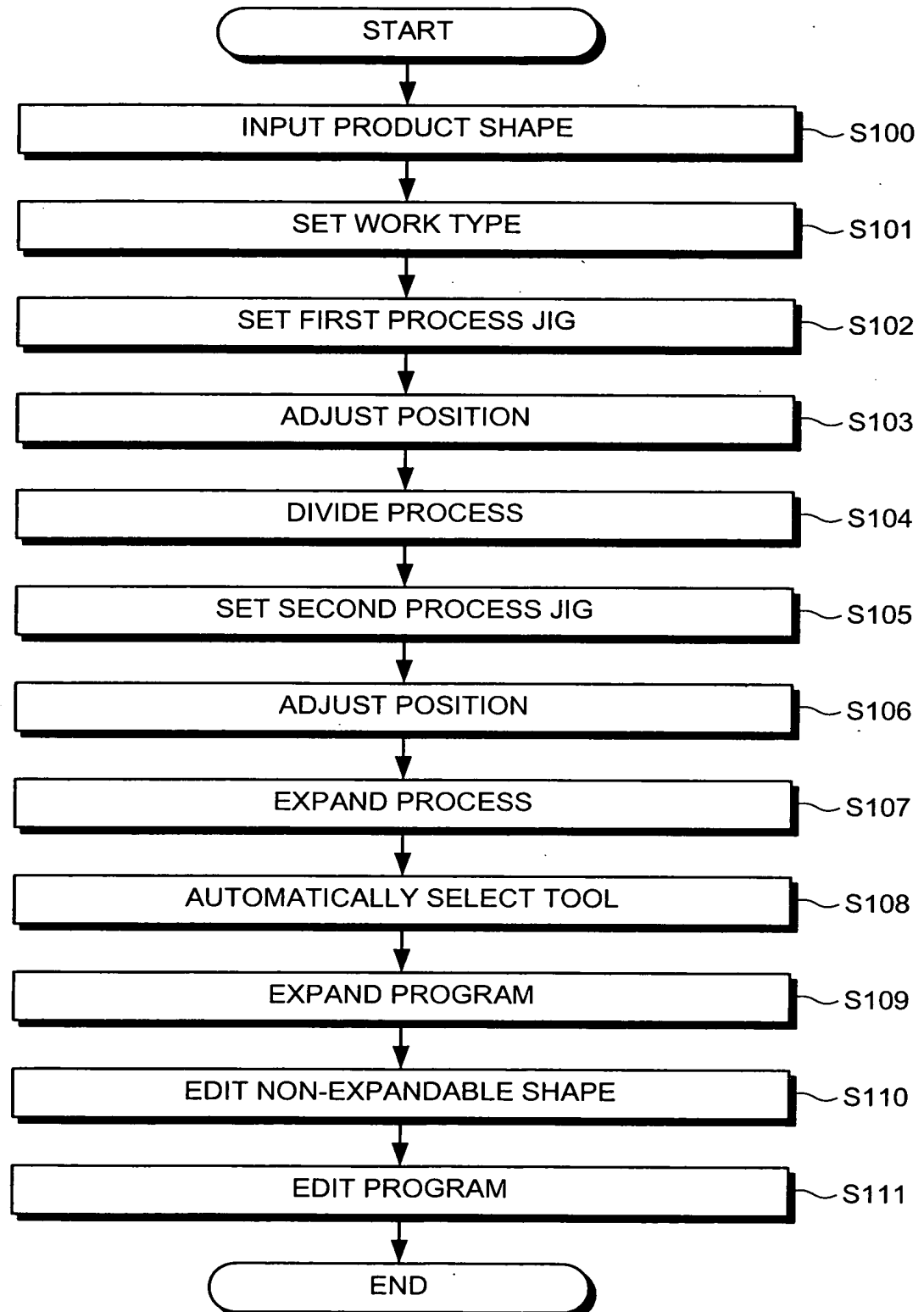


FIG.4

MENU SELECTION MAIN SCREEN

File(E) Help(H)

3D SHAPE PROGRAM

3D SHAPE

BASIC SHAPE

PRODUCT SHAPE

WORK SHAPE

FIXTURE SHAPE

FIRST FIXTURE

FIRST PROCESS MACHINING SHAPE

3 END FACE

4 TURNING DRILL

6 BAR

8 BAR

9 DRILL

SECOND PROCESS MACHINING SHAPE

13 END FACE

14 TURNING DRILL

16 BAR

18 BAR

21 END MILL FACE

23 END MILL FACE

25 END MILL FACE

28 POCKET MILL

30 POCKET MILL

33 POCKET MILL

35 POCKET MILL

38 POCKET MILL

41 HOLE WITH WASHER

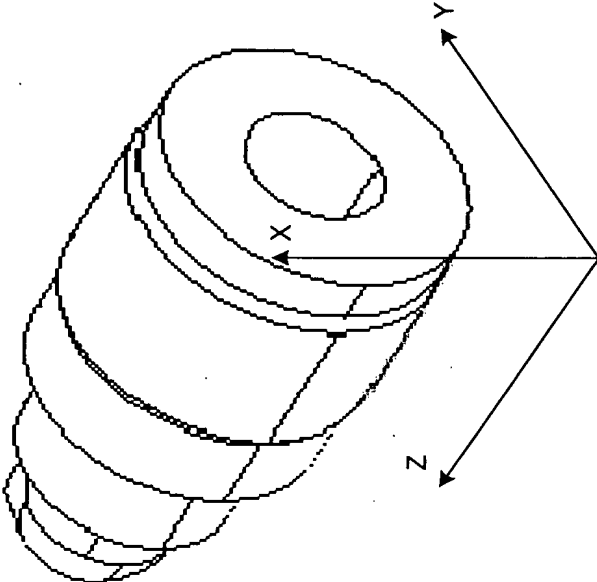
43 HOLE WITH WASHER

45 HOLE WITH WASHER

47 HOLE WITH WASHER

50 DRILL

52 DRILL



2D

6

100% 100% 100%

SET PRODUCT SHAPE

SET WORK TYPE

SET FIXTURE

ADJUST POSITION

DIVIDE PROCESS

EXPAND UNIT

EDIT UNIT

CREATE PROGRAM

6a

6b

6c

6d

6e

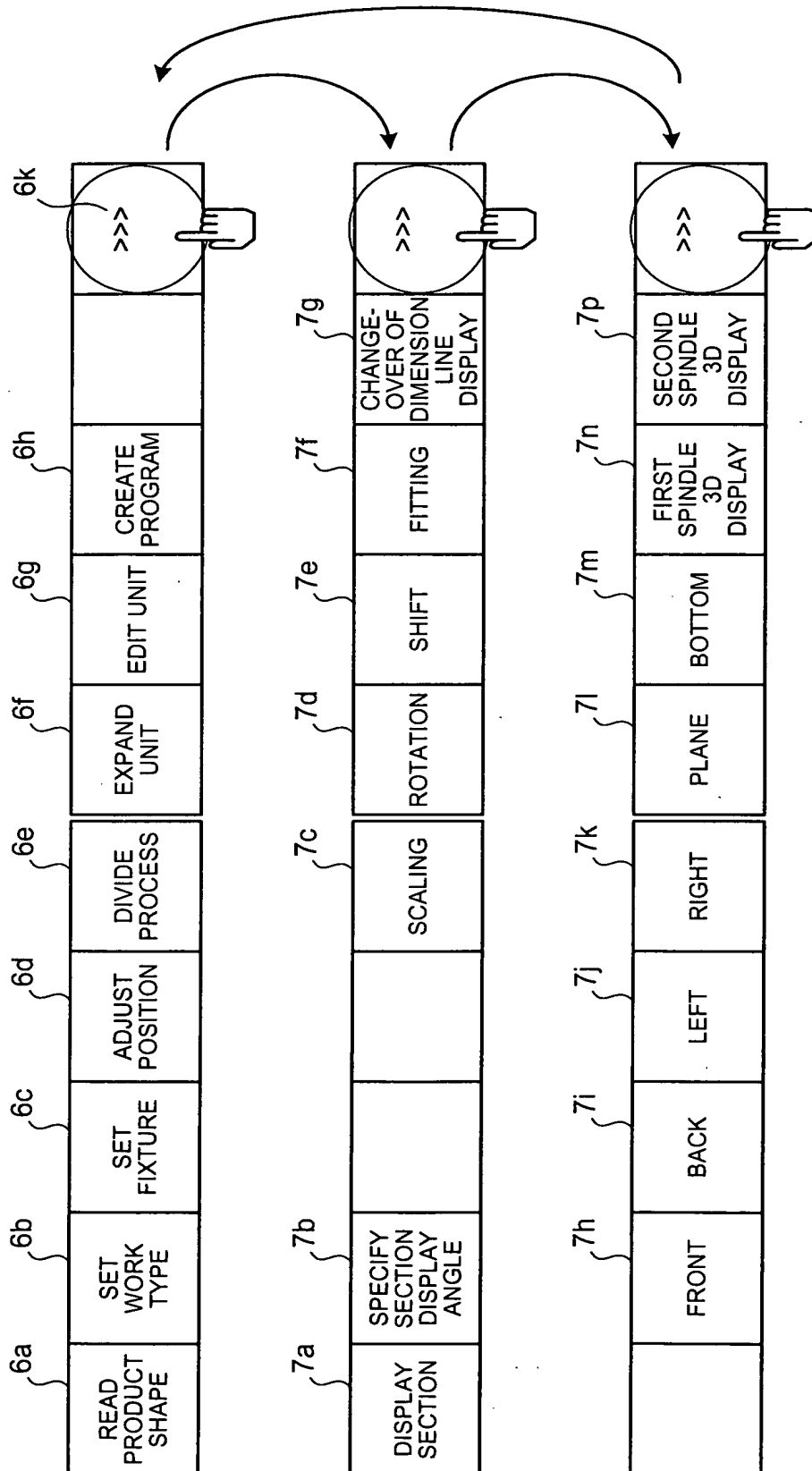
6f

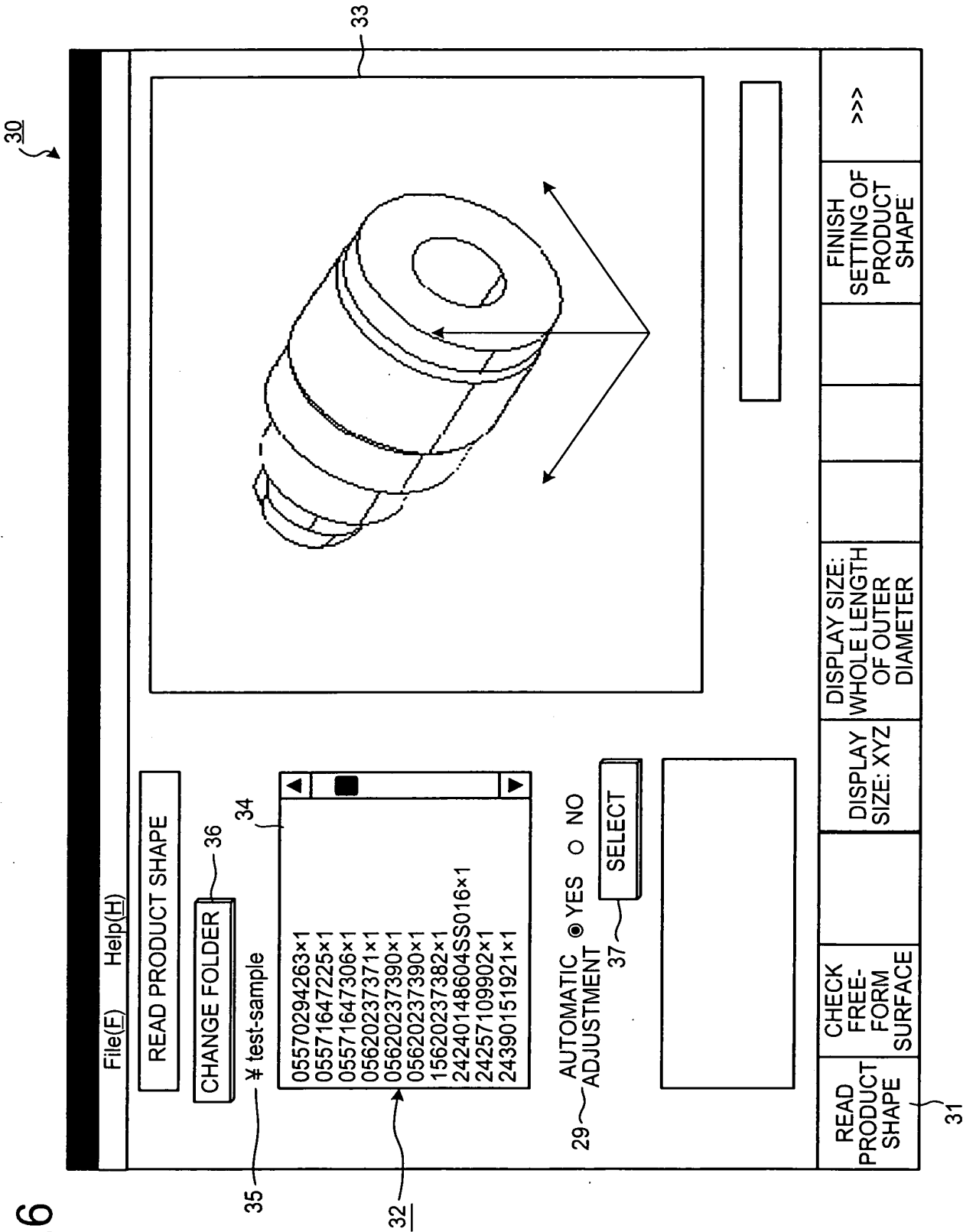
6g

6h

6k

FIG.5





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FIG.7

9

9a

9b

9c

9d

9e

9f

9g

WORK DATABASE

SET PARTIAL WORK

READ WORK MODEL

SET WORK MATERIAL

EDIT

CHANGE MACHINING ALLOWANCE

WORK TYPE SETTING

PRODUCT SHAPE

X 100 Y 100 Z 100

NO.	WORK MATERIAL	TYPE	OUTER DIAMETER	INNER DIAMETER	LENGTH
1	A7075	ROUND BAR	110.000	0.000	130.000
2	A5056	ROUND BAR	110.000	0.000	130.000
3	A7075	ROUND BAR	120.000	0.000	130.000
4	A5056	ROUND BAR	120.000	0.000	130.000
5	CBN STL	ROUND BAR	120.000	0.000	130.000
6	STNLESS	ROUND BAR	130.000	0.000	130.000
7	STNLESS	ROUND BAR	140.000	0.000	130.000
8	A7075	ROUND BAR	150.000	10.000	130.000
9	A7075	ROUND BAR	150.000	10.000	130.000
10	A7075	ROUND BAR	150.000	10.000	130.000
11	A7075	ROUND BAR	150.000	10.000	130.000
12	A5056	ROUND BAR	120.000	0.000	130.000

301

303

300

302

304

3

OK

WORK TYPE SETTING

NO. 3

WORK MATERIAL A7075

WORK TYPE ROUND BAR

OUTER DIAMETER 120

INNER DIAMETER 0

LENGTH 130

END-FACE MACHINING ALLOWANCE 0

OK

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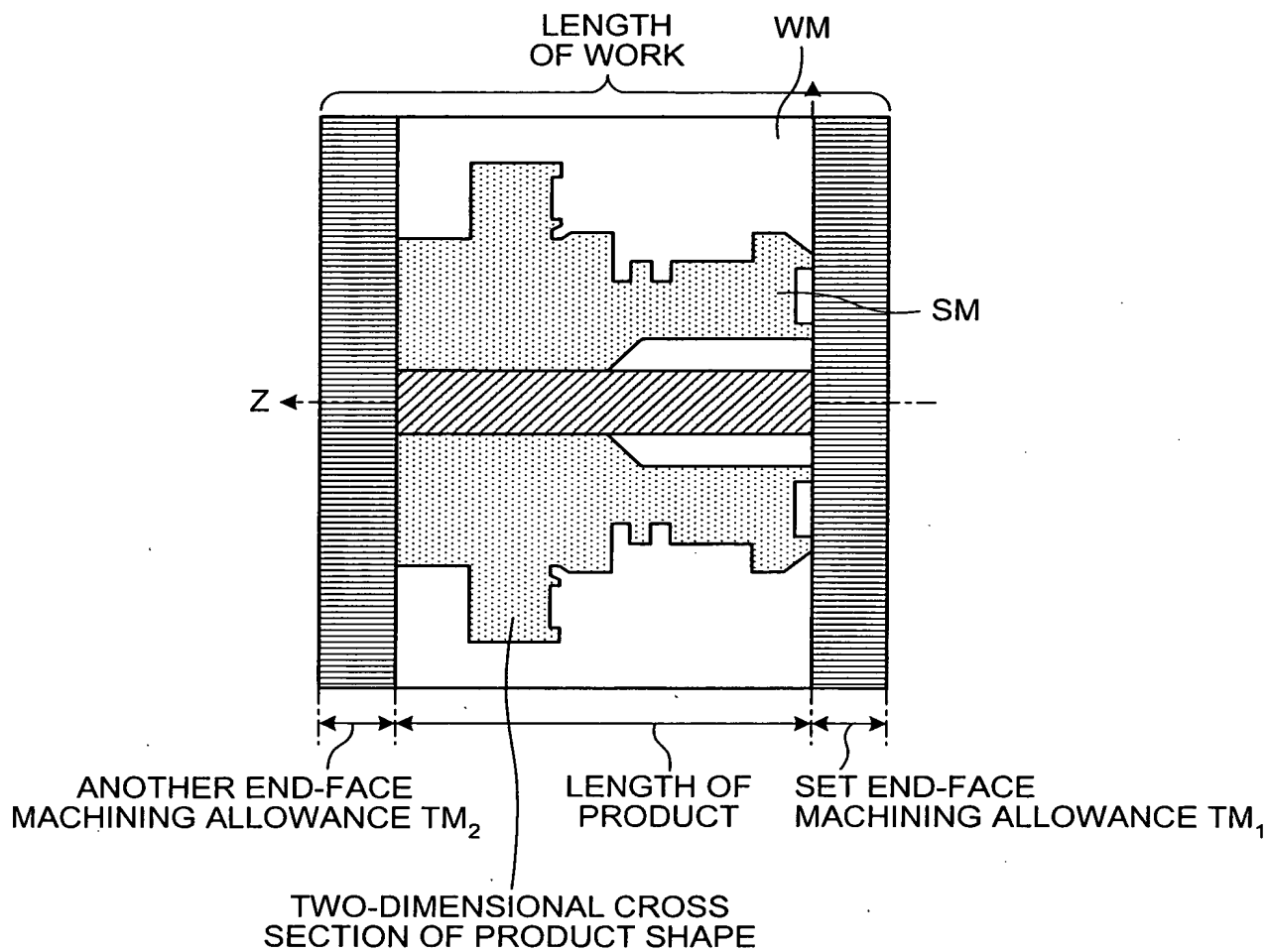
FIG.8

WORK SHAPE

MATERIAL	TYPE	OUTER DIAMETER	INNER DIAMETER
CBN STL	Cylinder	250	20	
CBN STL	Cylinder	250	30	
CBN STL	Cylinder	250	40	
CBN STL	Cylinder	250	50	
CBN STL	Cylinder	400		
CBN STL	Cylinder	400	30	
CBN STL	Cylinder	500		
CBN STL	Cylinder	800	70	
CBN STL	Cylinder	800	100	
CBN STL	Hexagon	300		
CBN STL	Hexagon	300		
CBN STL	Hexagon	400		

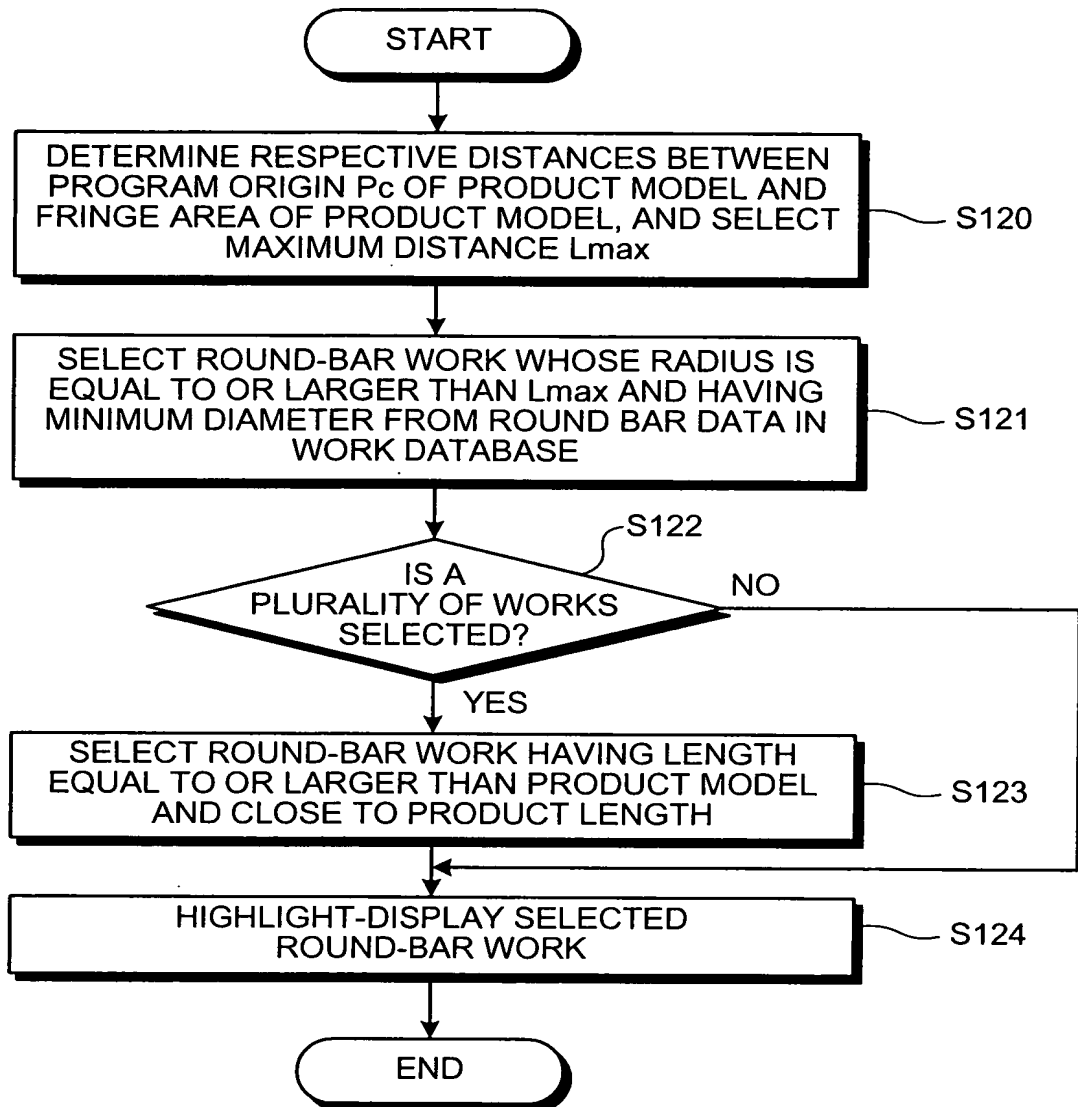
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FIG.9



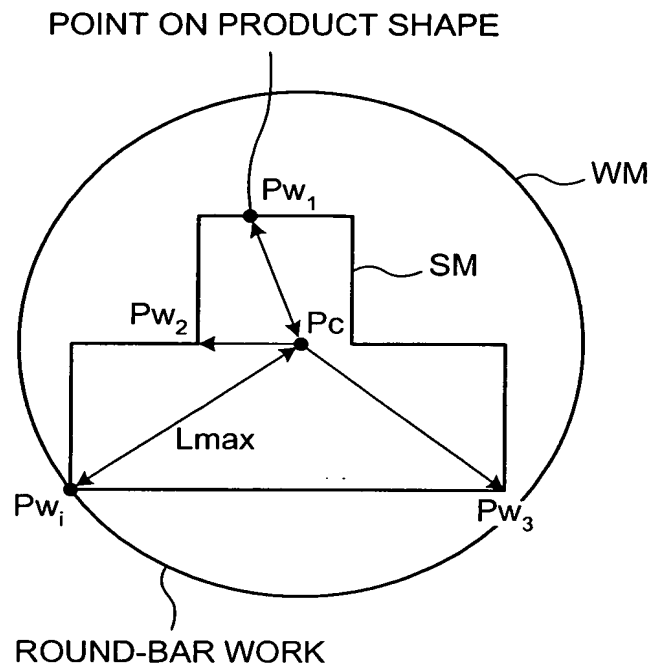
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FIG.10



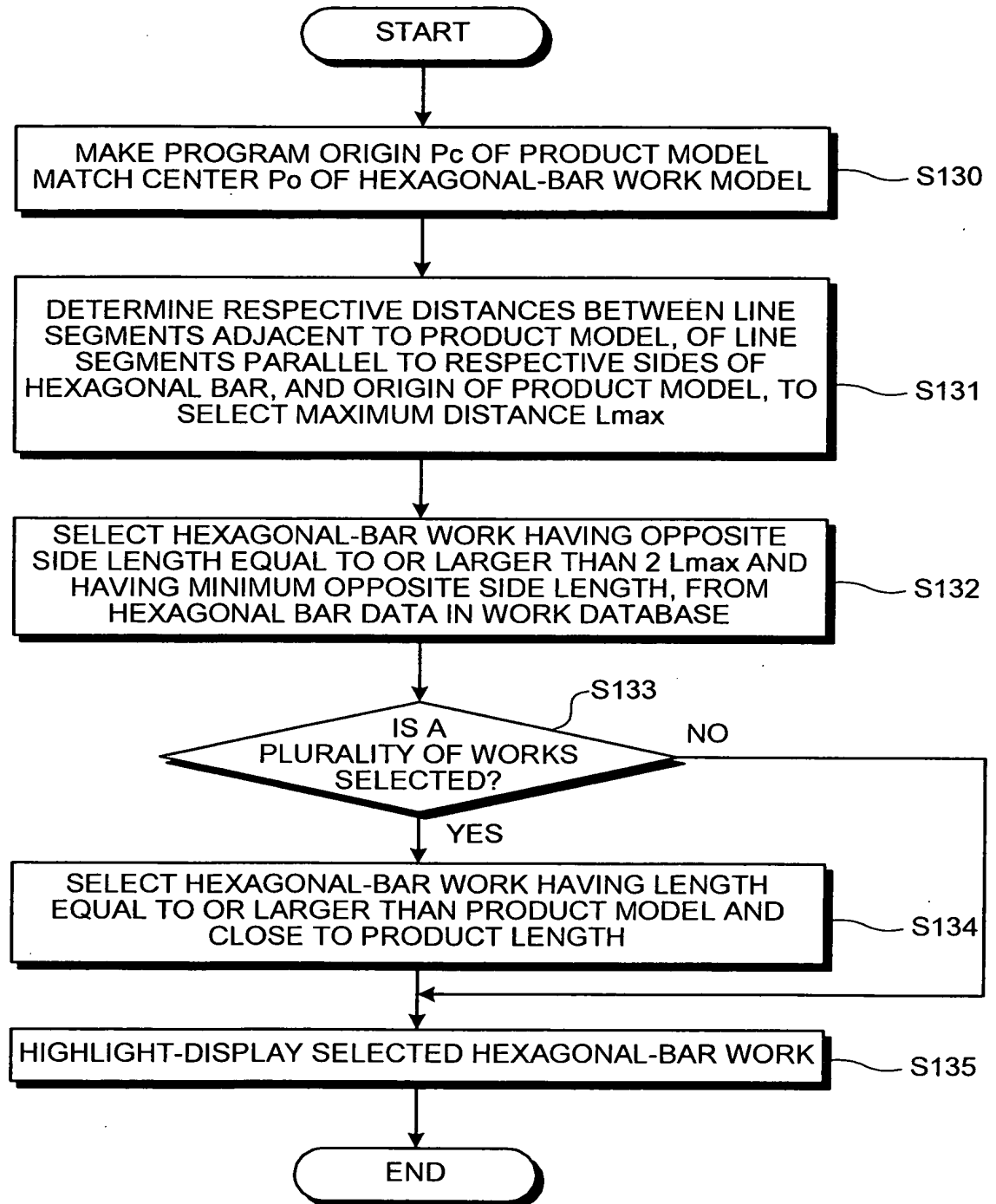
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FIG.11



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FIG.12



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FIG.13

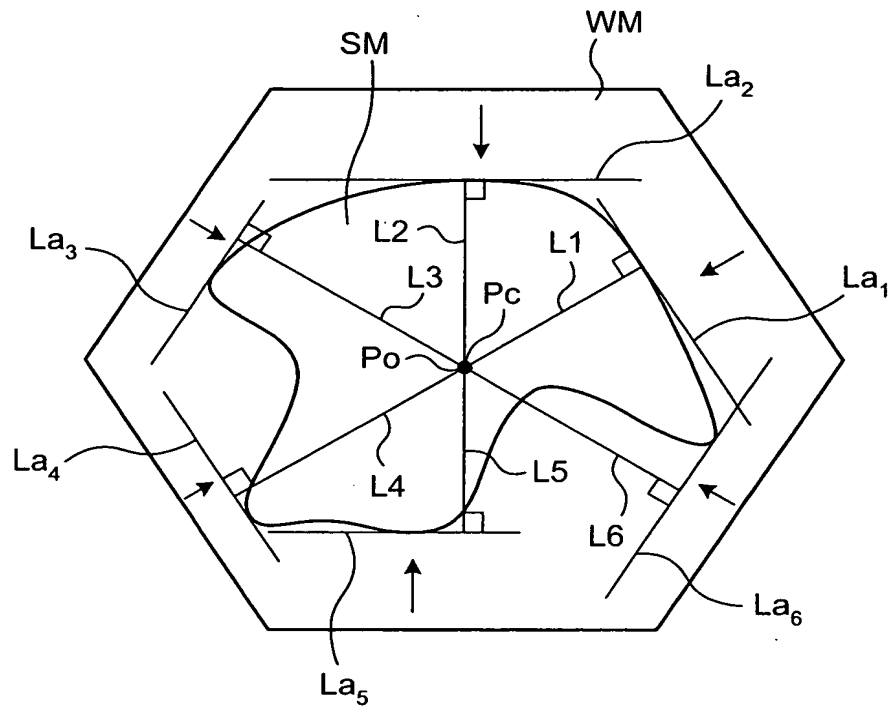


FIG.14

9

9a

9b

9c

9d

9e

9f

9g

9h

9i

WORK DATABASE

SET PARTIAL WORK

READ WORK MODEL

SET WORK MATERIAL

EDIT

CHANGE MACHINING ALLOWANCE

WORK TYPE SETTING

PRODUCT SHAPE

X

Y

Z

100

100

100

NO. WORK MATERIAL TYPE OUTER DIAMETER INNER DIAMETER LENGTH

3 A7075 ROUND BAR 120.000 0.000 130.000

9 A5056 ROUND BAR 120.000 0.000 140.000

100 CBN STL ROUND BAR 120.000 0.000 150.000

5 STNLESS ROUND BAR 130.000 0.000 130.000

15 STNLESS ROUND BAR 140.000 0.000 130.000

20 A7075 ROUND BAR 150.000 10.000 130.000

23 A7075 ROUND BAR 150.000 10.000 160.000

91 A7075 ROUND BAR 150.000 10.000 160.000

94 A7075 ROUND BAR 150.000 10.000 170.000

3

OK

301

303

300

302

304

305

NO.

3

WORK MATERIAL

A7075

WORK TYPE

ROUND BAR

OUTER DIAMETER

120

INNER DIAMETER

0

LENGTH

130

END-FACE MACHINING ALLOWANCE

0

OK

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FIG.15

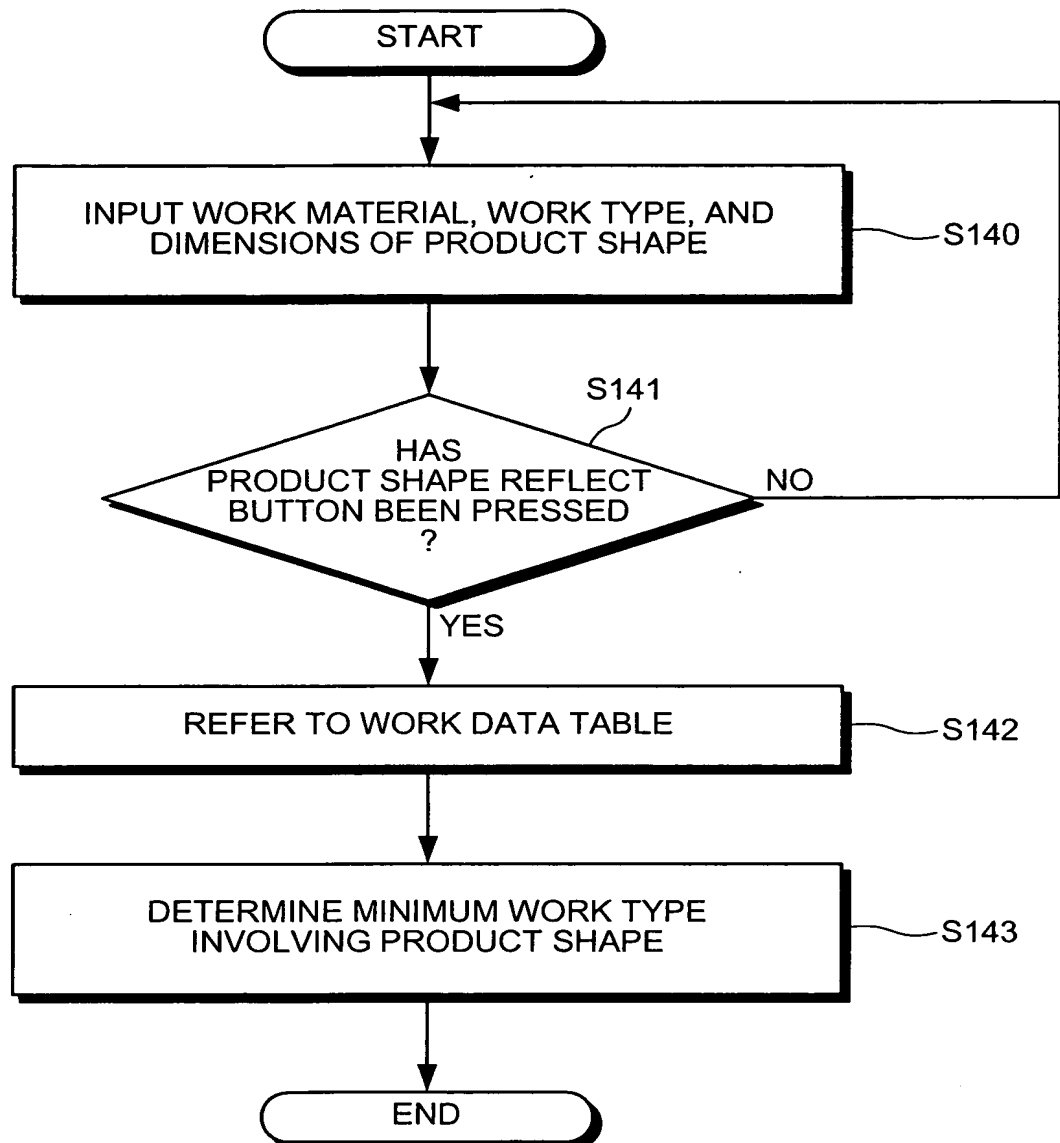


FIG.16

40

43

WORK TYPE SETTING

REFLECT PRODUCT SHAPE

PRODUCT SHAPE

X 180

Y 180

Z 150

41

WORK MATERIAL

44 CBN STL

WORK TYPE

45 ROUND BAR

OUTER DIAMETER

46 254.5584

INNER DIAMETER

47 0

LENGTH

48 150

END-FACE MACHINING ALLOWANCE

49 0

CREATE

50

42

CBN STL	ROUND BAR	OUTER DIAMETER 250.0	INNER DIAMETER 20.0
CBN STL	ROUND BAR	OUTER DIAMETER 250.0	INNER DIAMETER 30.0
CBN STL	ROUND BAR	OUTER DIAMETER 250.0	INNER DIAMETER 40.0
CBN STL	ROUND BAR	OUTER DIAMETER 250.0	INNER DIAMETER 50.0
CBN STL	ROUND BAR	OUTER DIAMETER 400.0	INNER DIAMETER 0.0
CBN STL	ROUND BAR	OUTER DIAMETER 400.0	INNER DIAMETER 30.0
CBN STL	ROUND BAR	OUTER DIAMETER 500.0	INNER DIAMETER 0.0
CBN STL	ROUND BAR	OUTER DIAMETER 500.0	INNER DIAMETER 70.0
CBN STL	ROUND BAR	OUTER DIAMETER 800.0	INNER DIAMETER 100.0
CBN STL	ROUND BAR	OUTER DIAMETER 800.0	INNER DIAMETER 100.0

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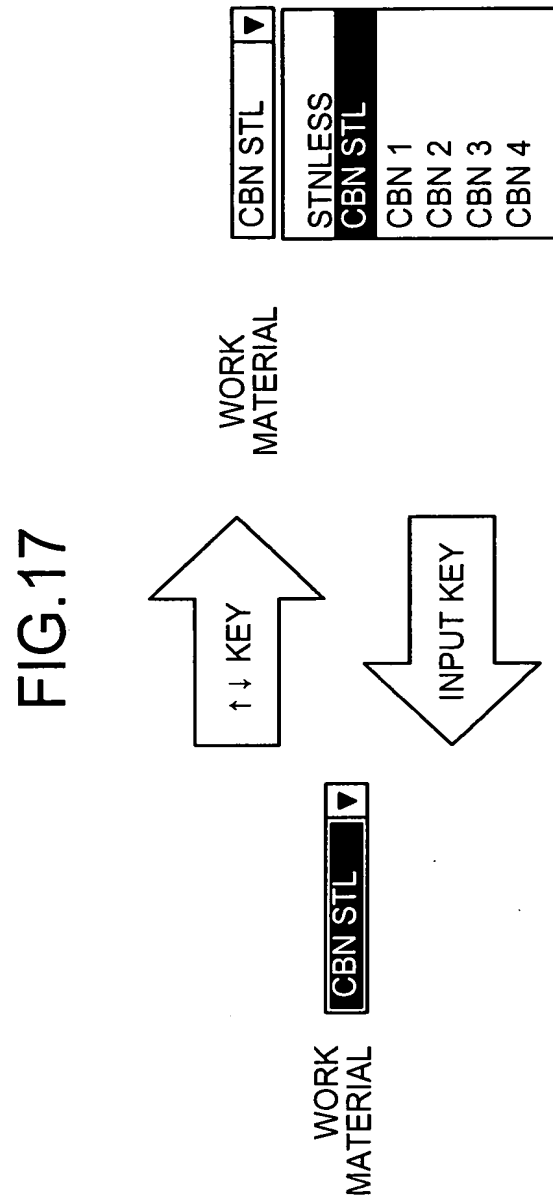
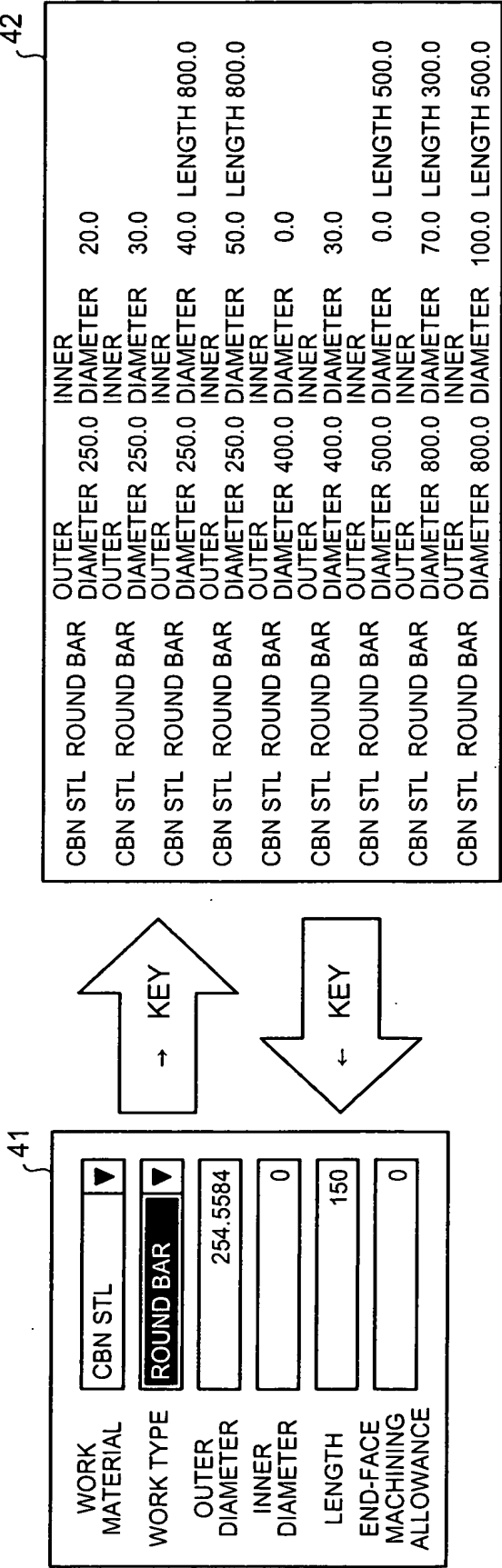
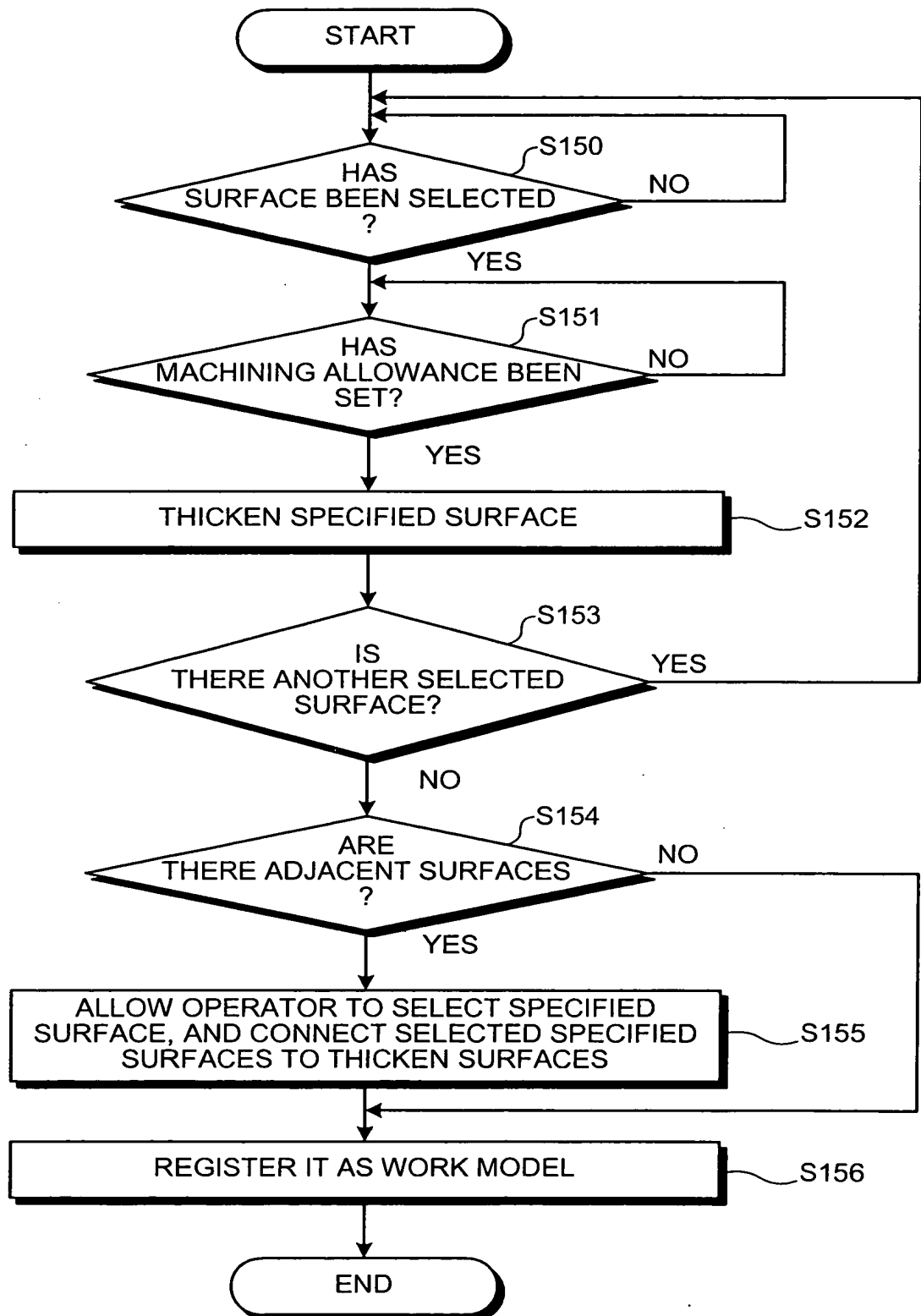


FIG.18



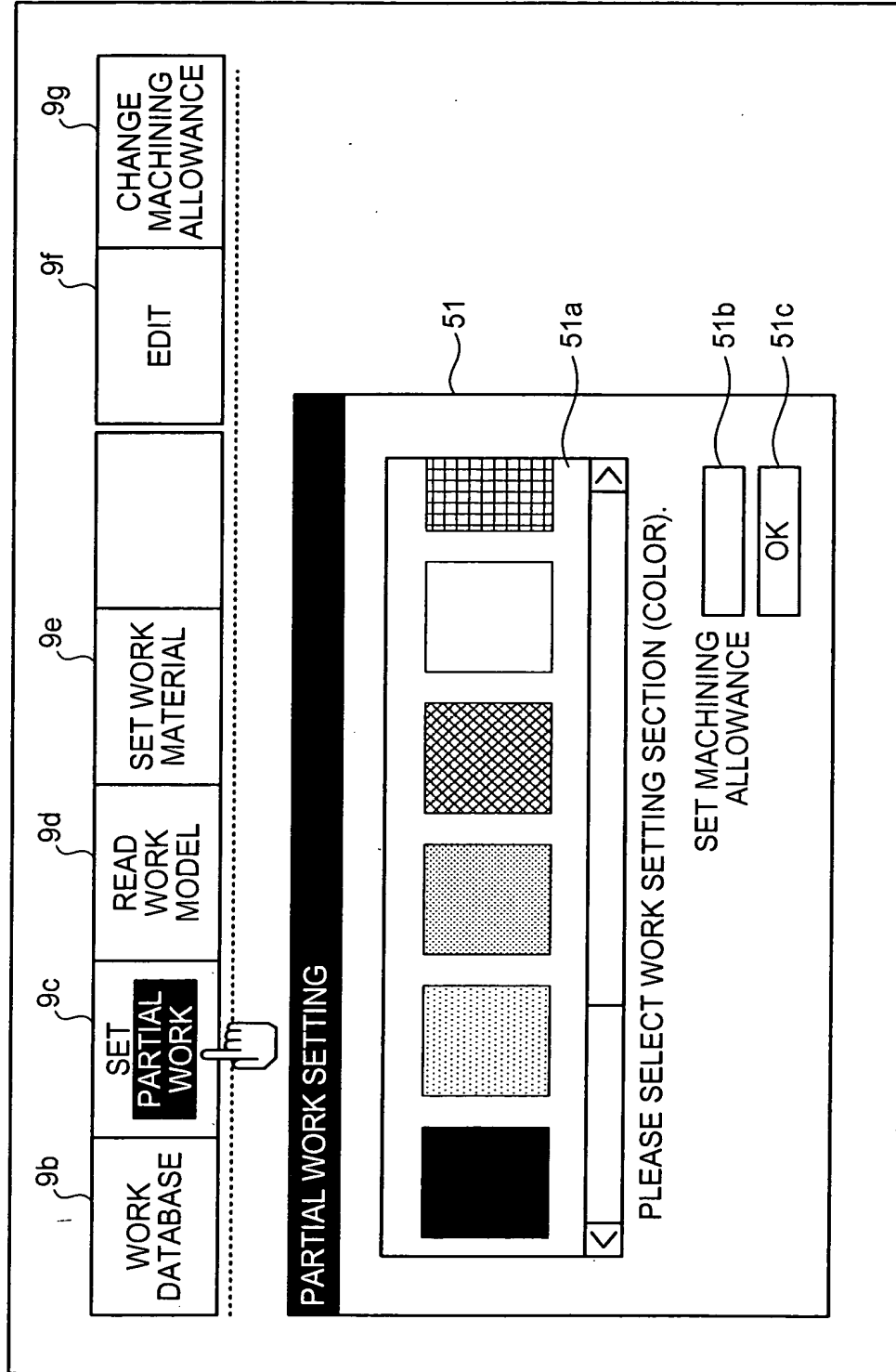
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FIG.19



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FIG.20



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FIG.21

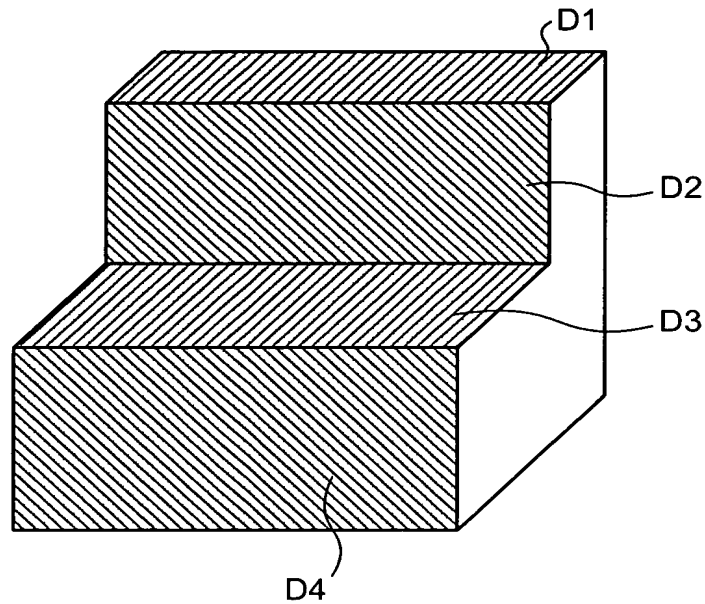
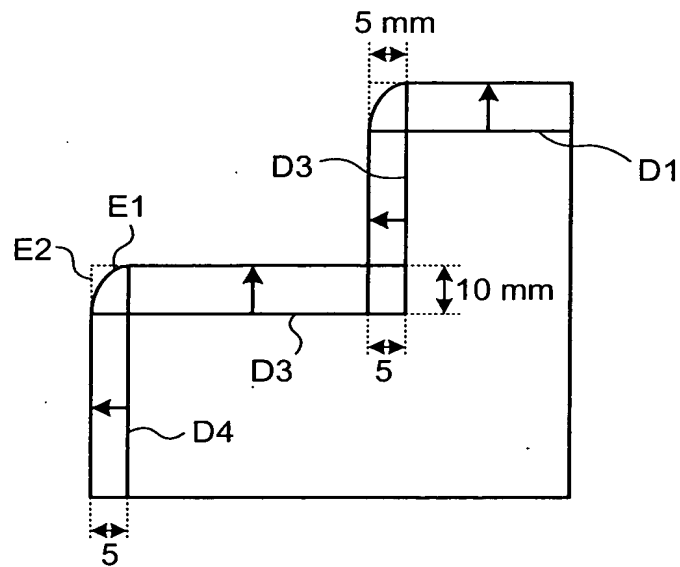


FIG.22



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FIG.23

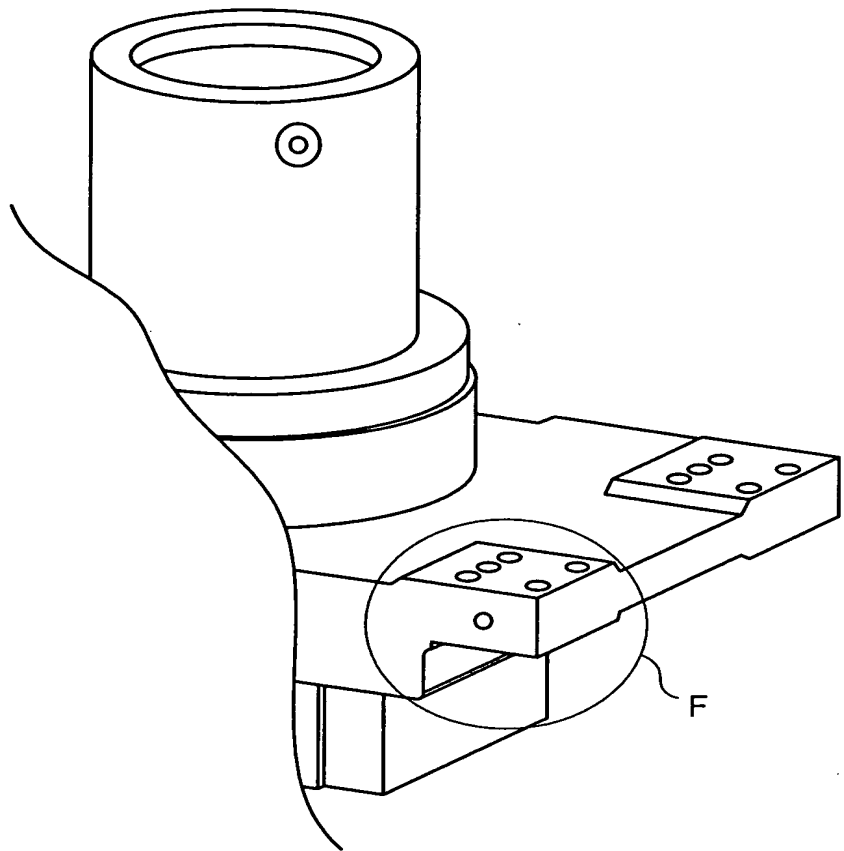
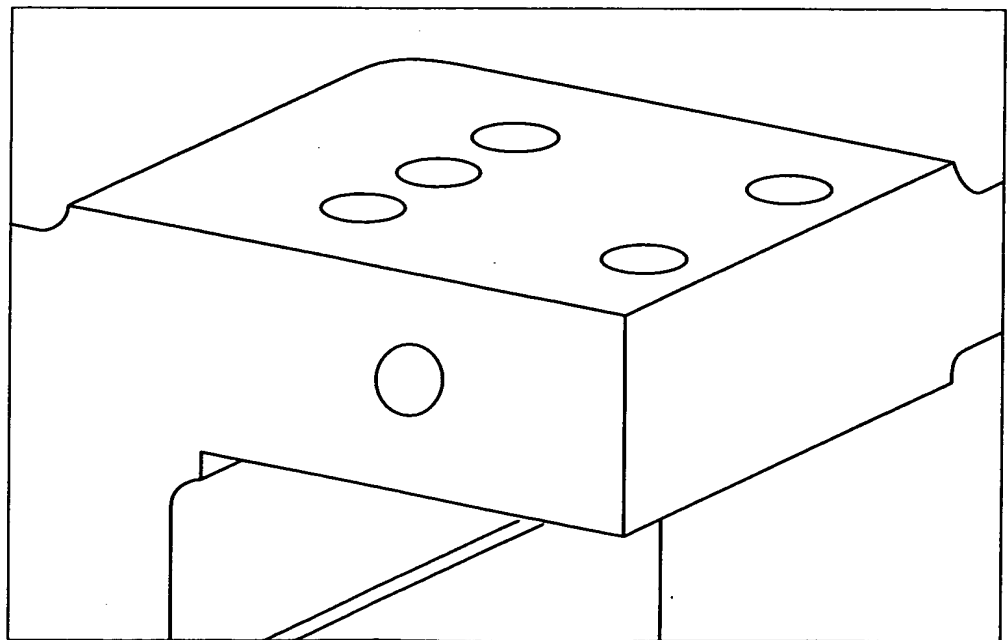


FIG.24



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FIG.25

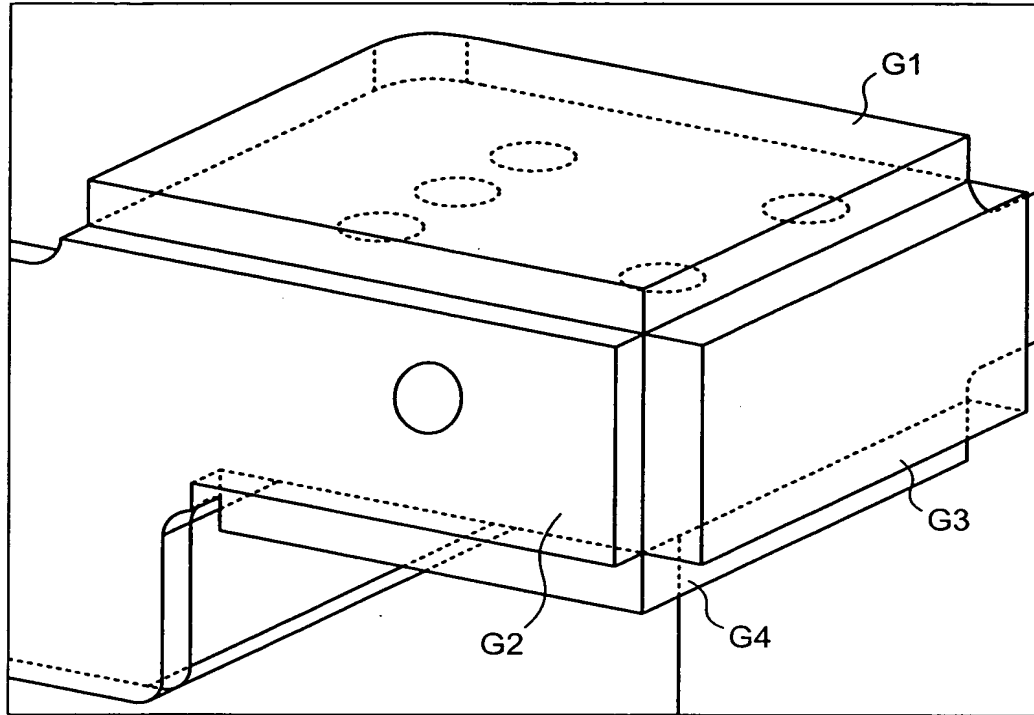
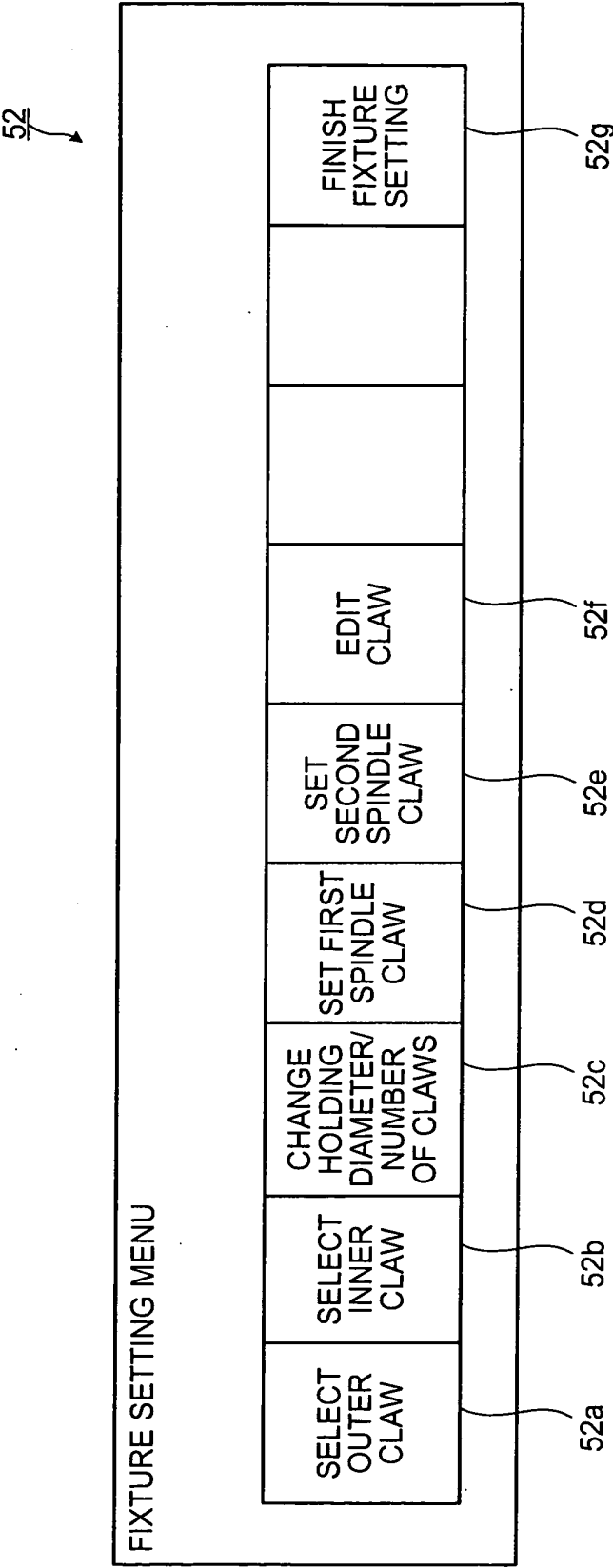
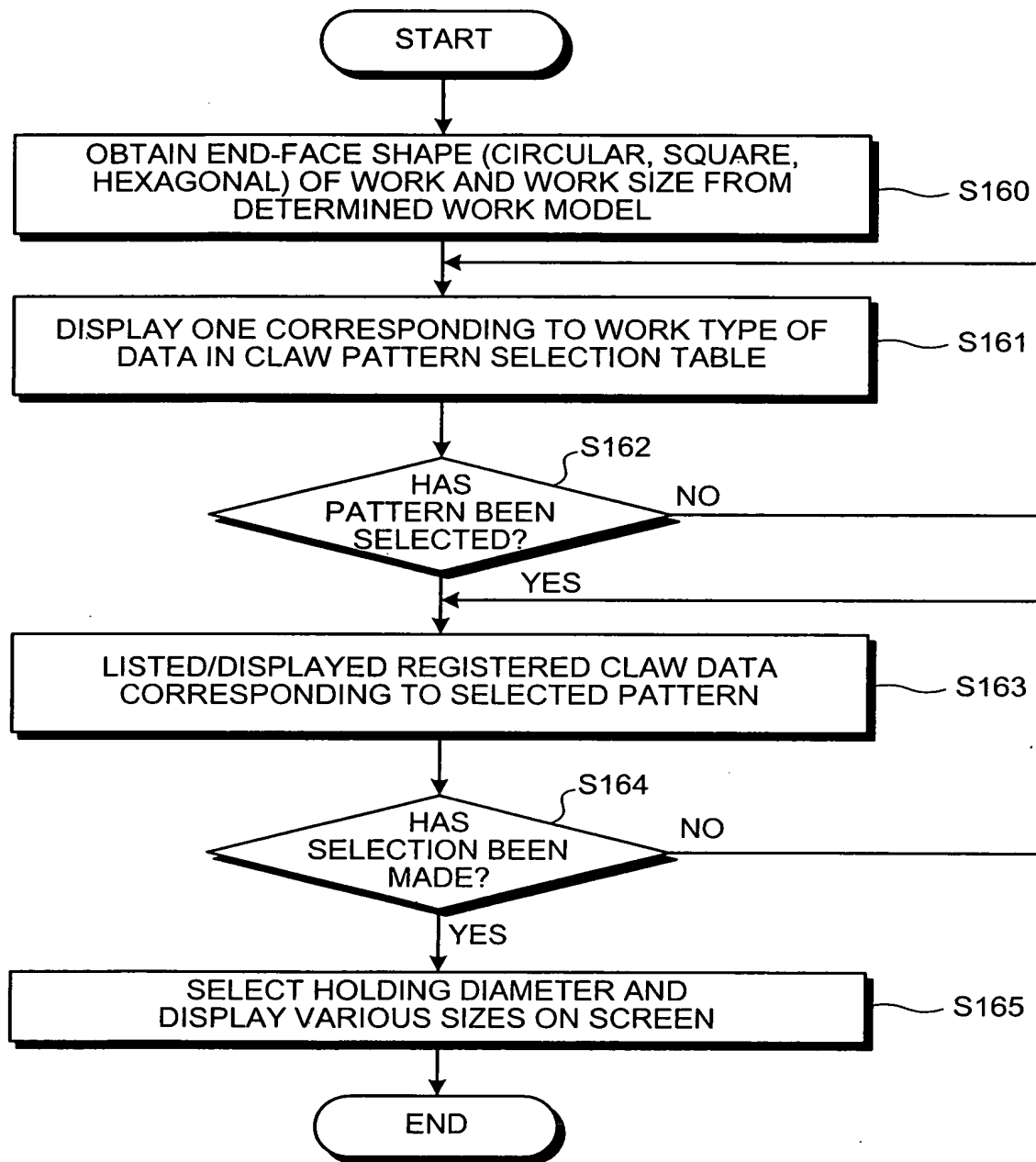


FIG.26



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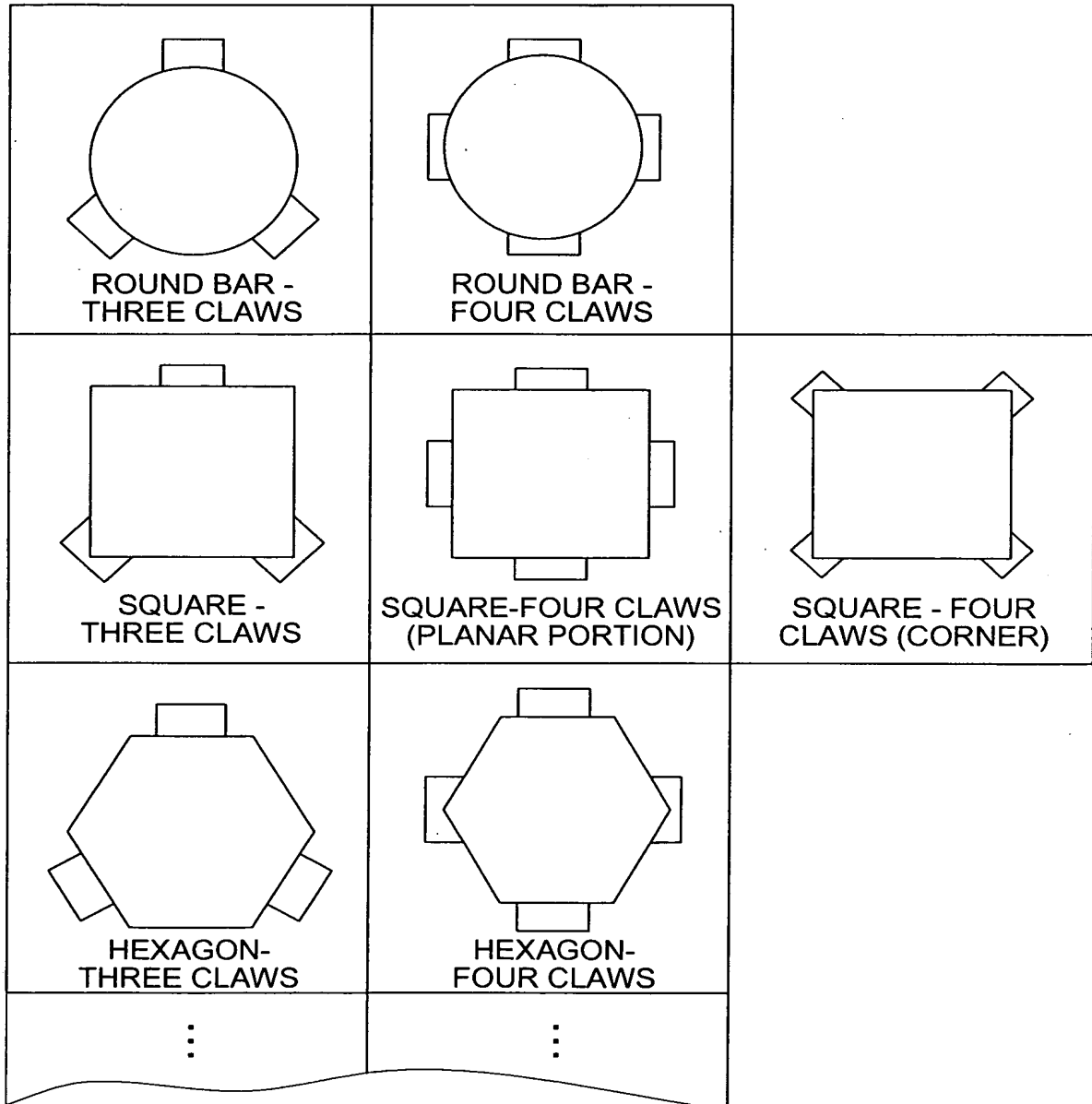
FIG.27



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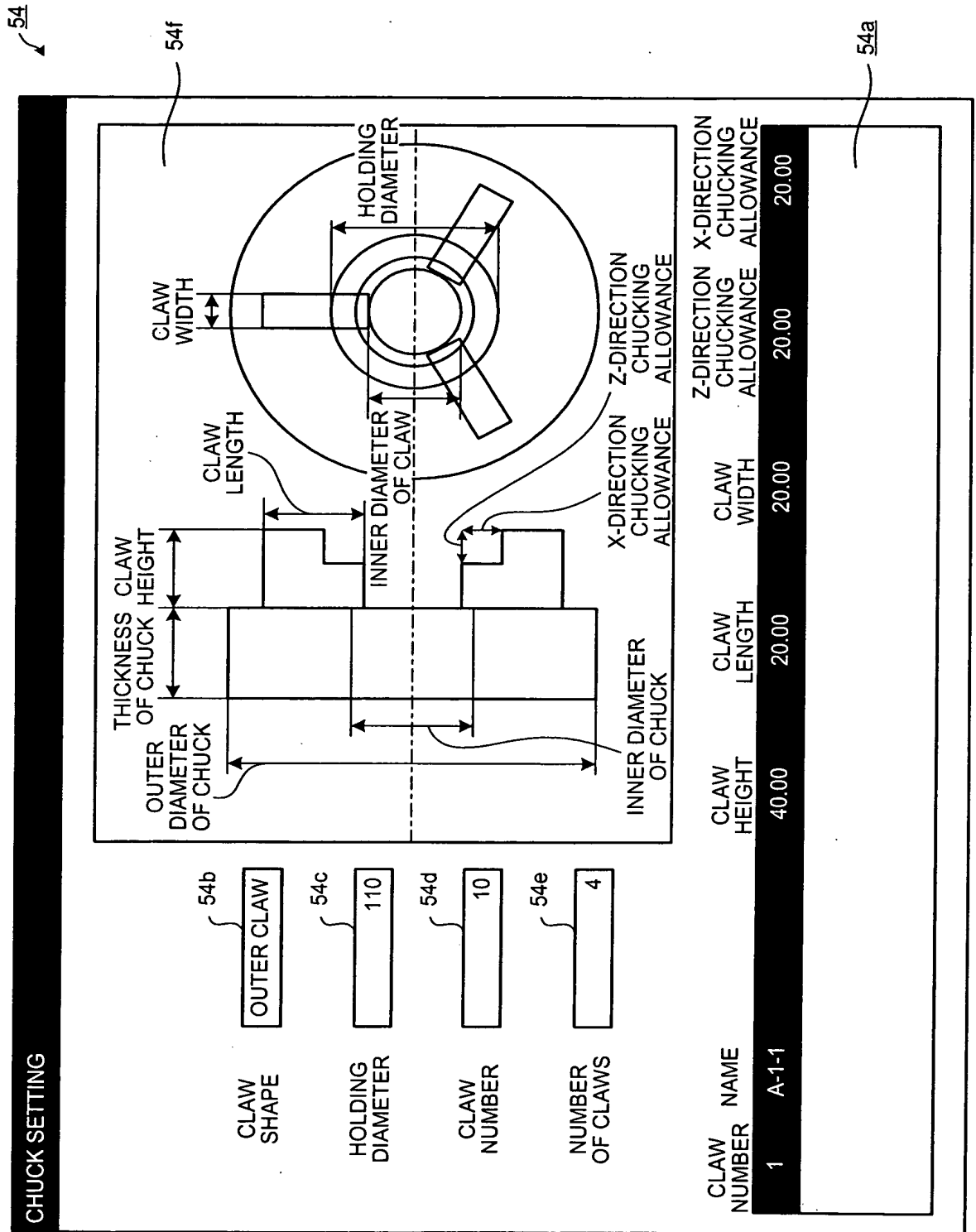
FIG.28

53
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FIG.29



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FIG.30

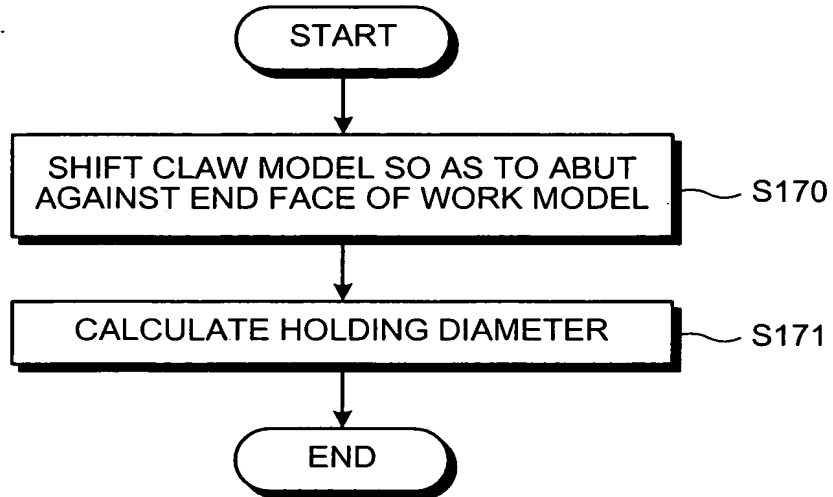
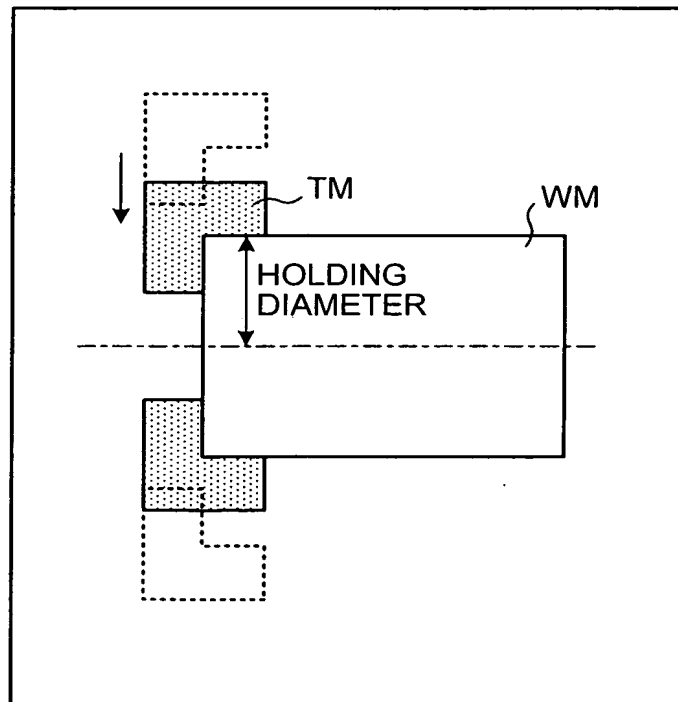
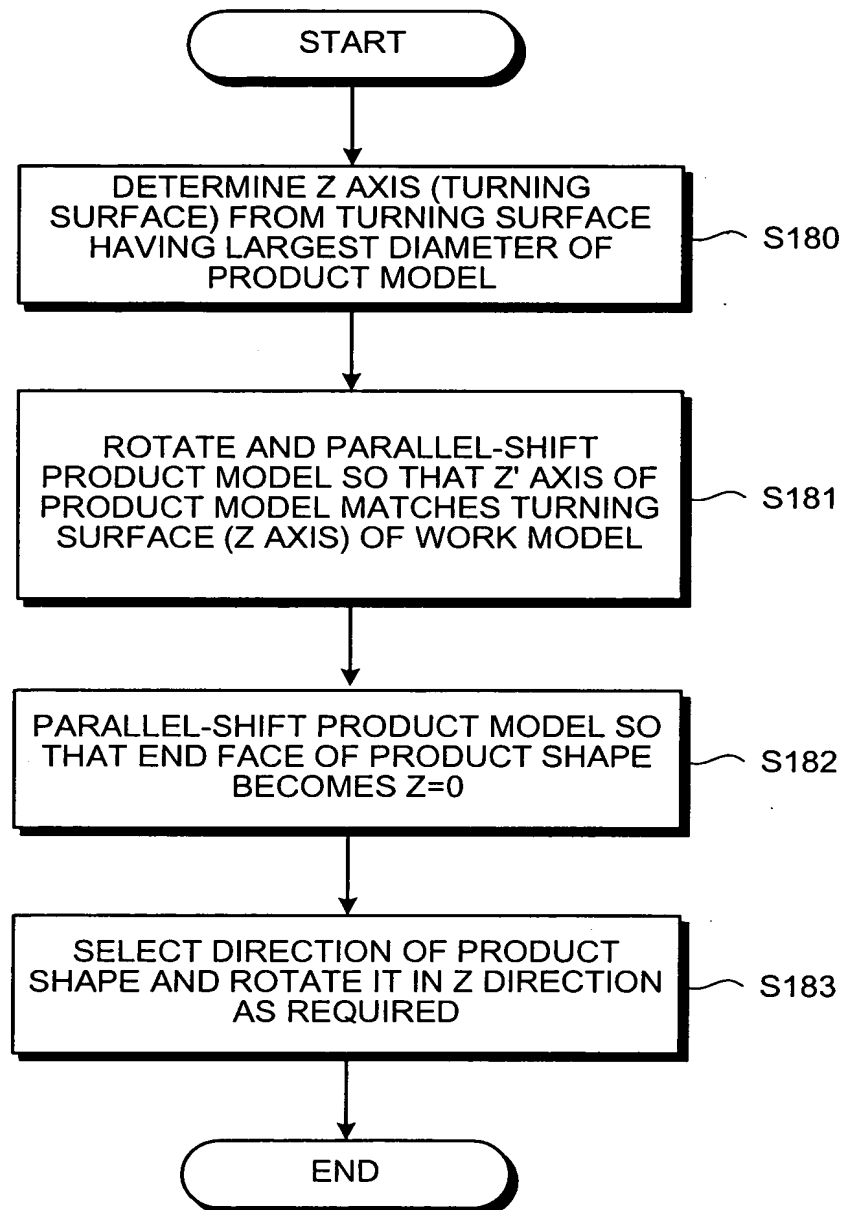


FIG.31



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FIG.32



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FIG.33

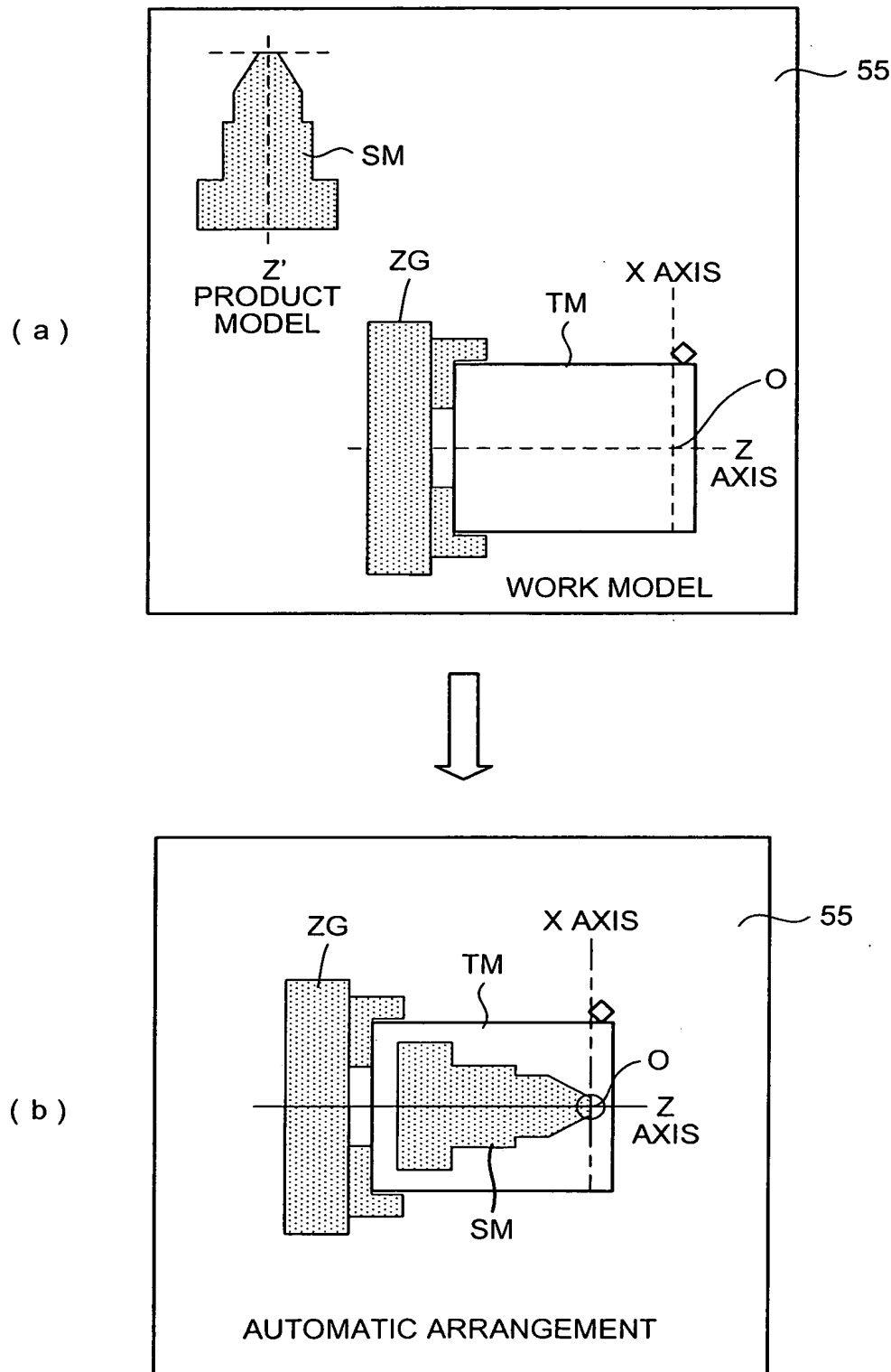


FIG.34A

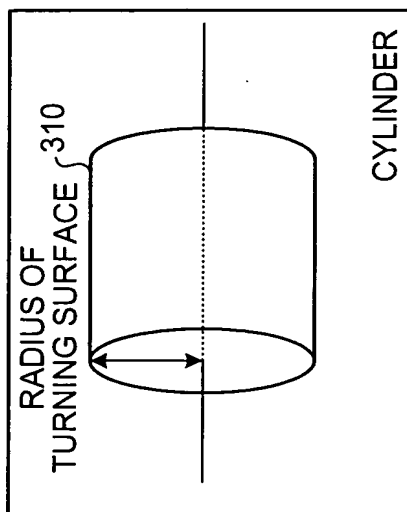


FIG.34B

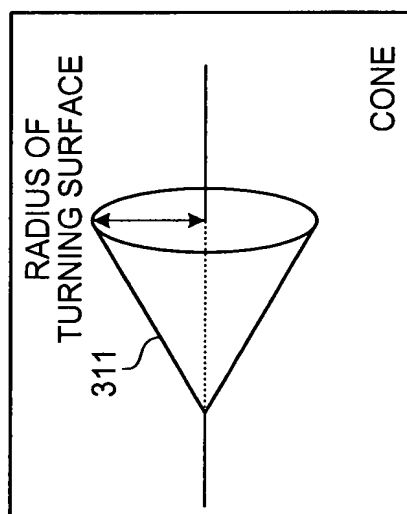


FIG.34E

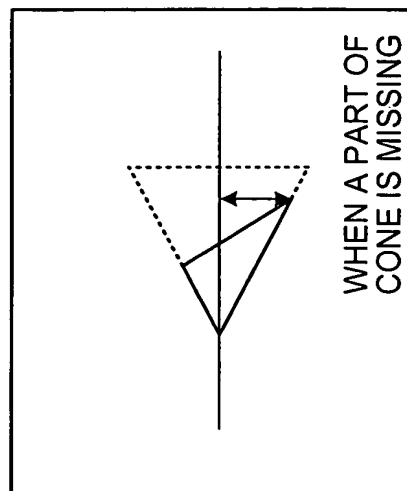


FIG.34C

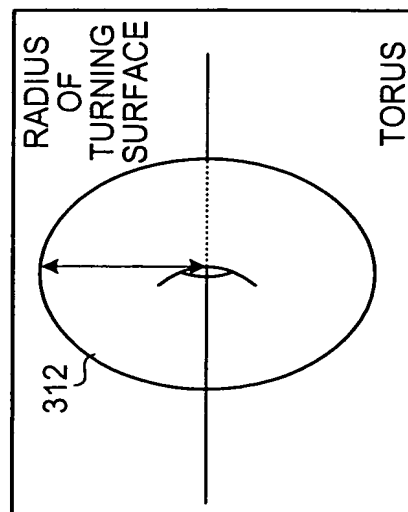
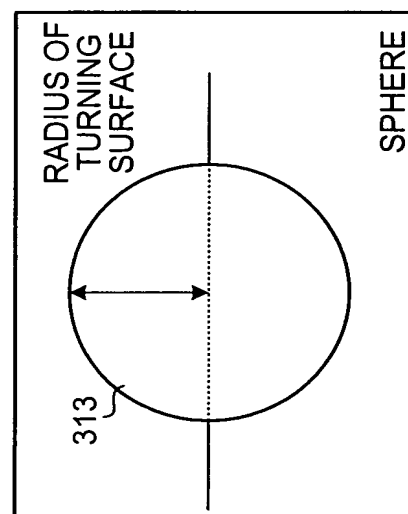


FIG.34D



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FIG.35

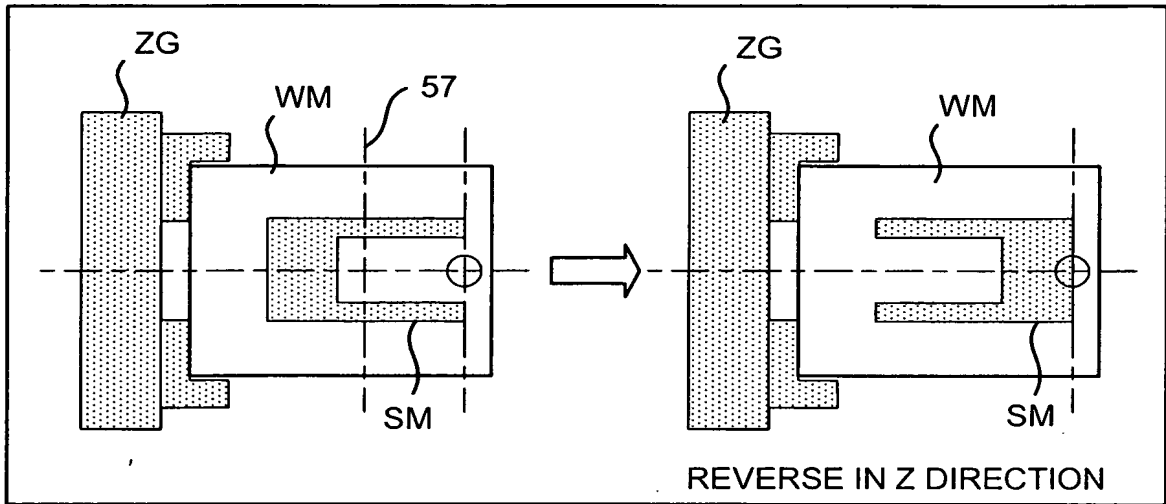


FIG.36

X-AXIS PARALLEL SHIFT	Y-AXIS PARALLEL SHIFT	Z-AXIS PARALLEL SHIFT		X-AXIS ROTATION	Y-AXIS ROTATION	Z-AXIS ROTATION		FINISH SHAPE SHIFT	
-----------------------------	-----------------------------	-----------------------------	--	--------------------	--------------------	--------------------	--	--------------------------	--

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FIG.37

SHAPE SHIFT

☒ PRODUCT SHAPE
☐ WORK SHAPE
☐ FIRST CHUCK SHAPE
☐ SECOND CHUCK SHAPE

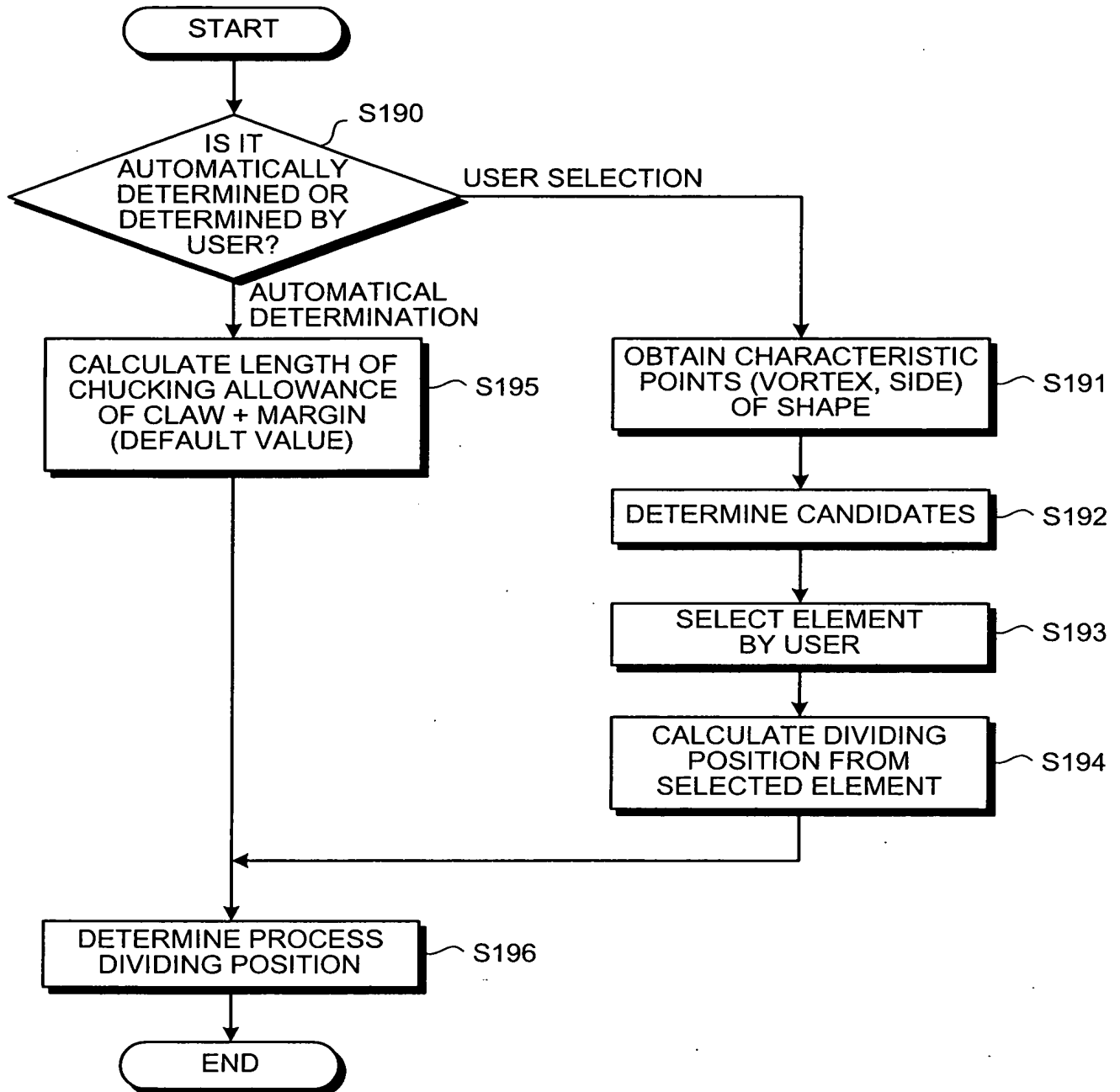
STEP AMOUNT 0

SHIFT AMOUNT 0

SHIFT

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FIG.38



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FIG.39

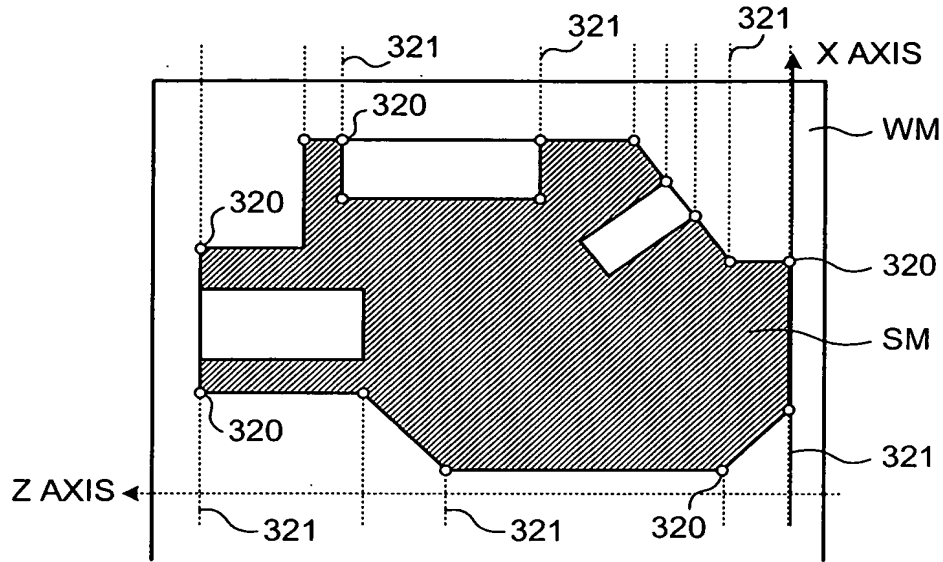
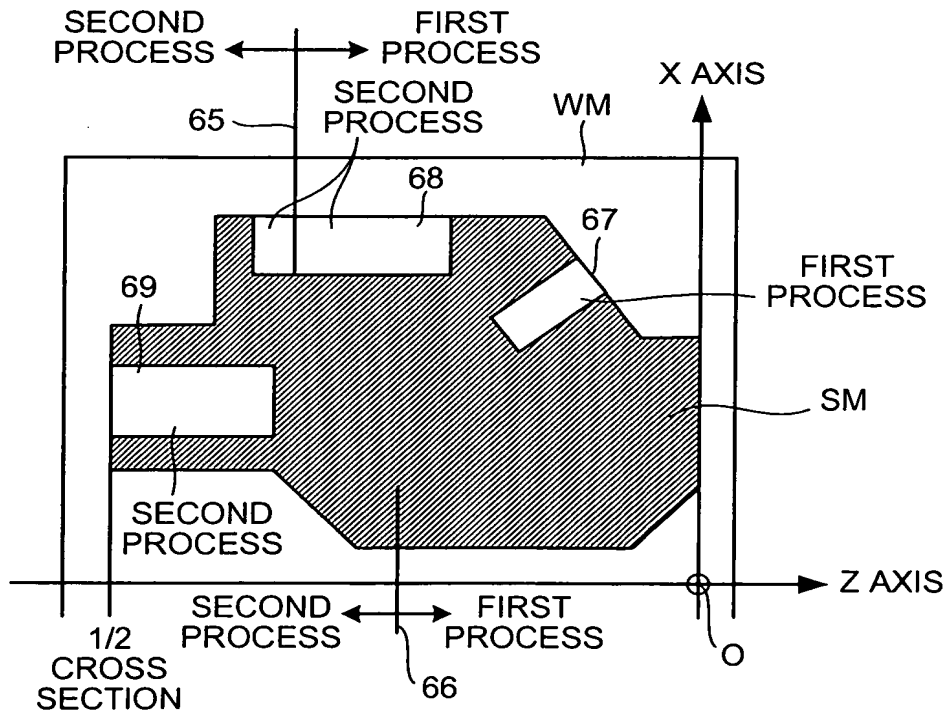
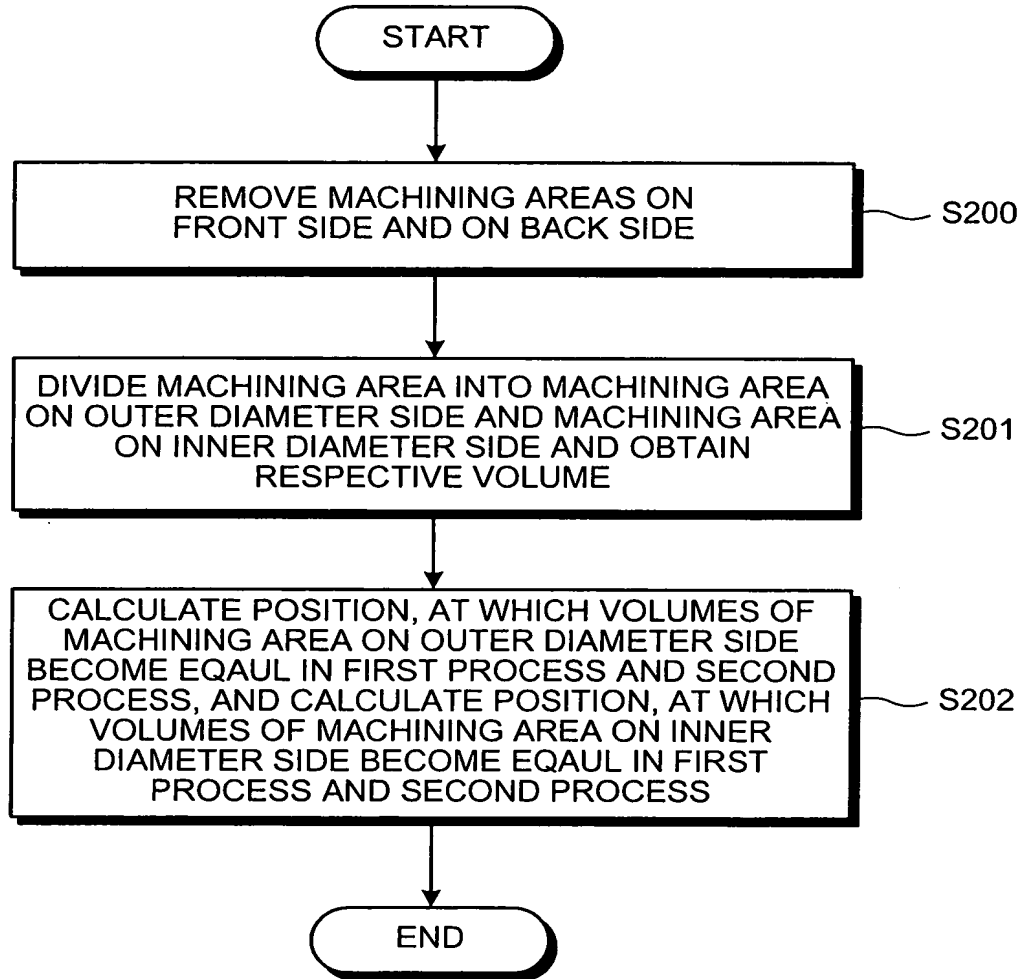


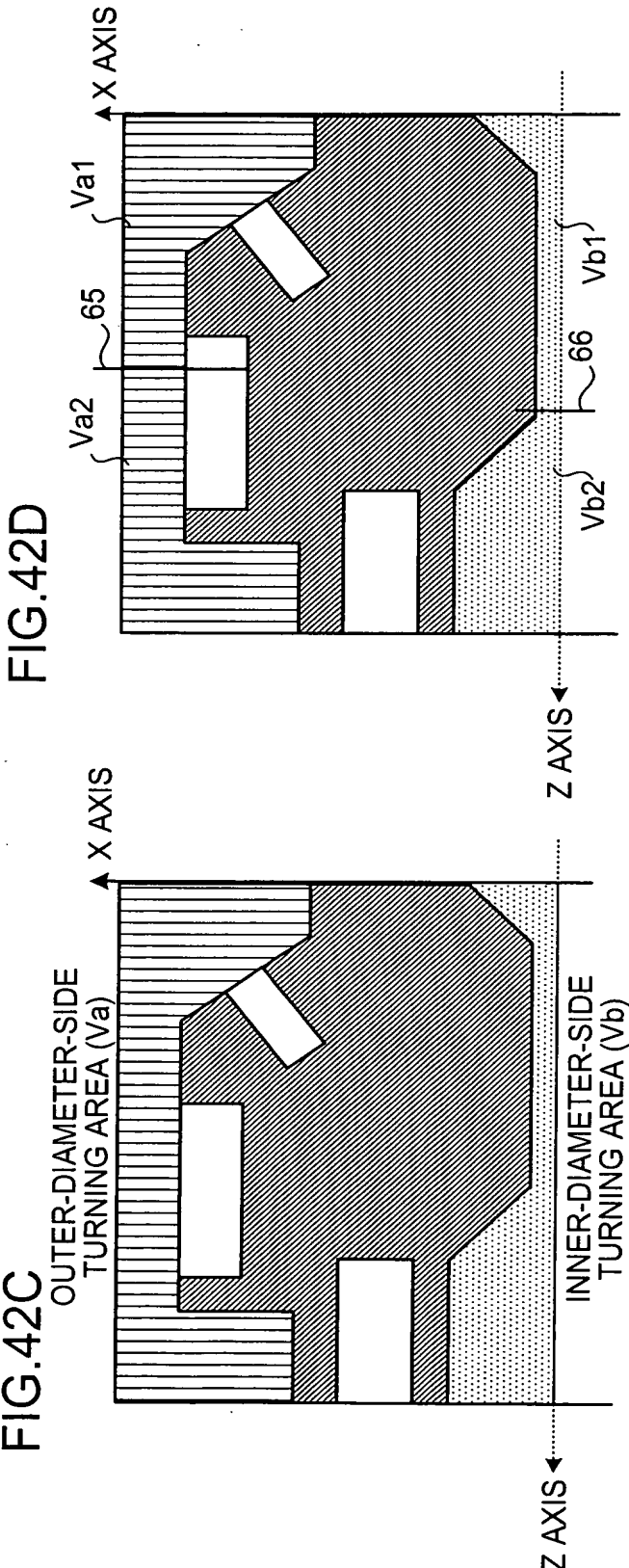
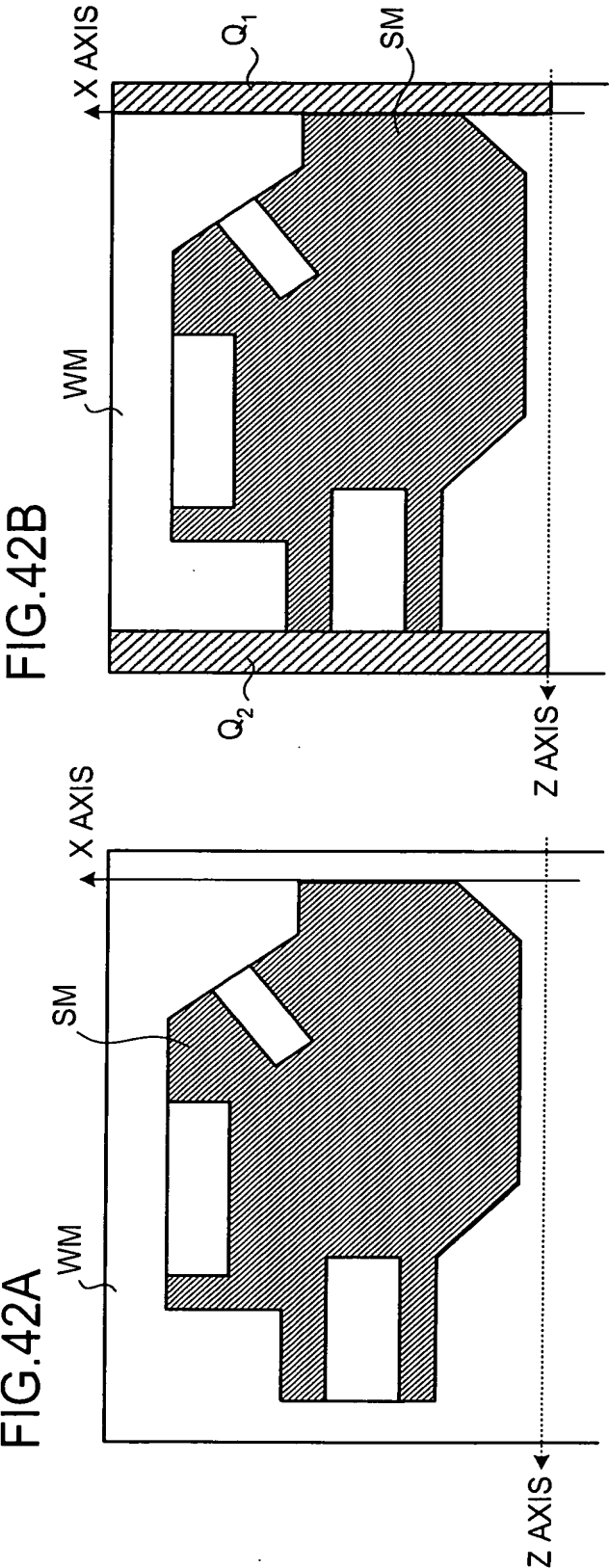
FIG.40



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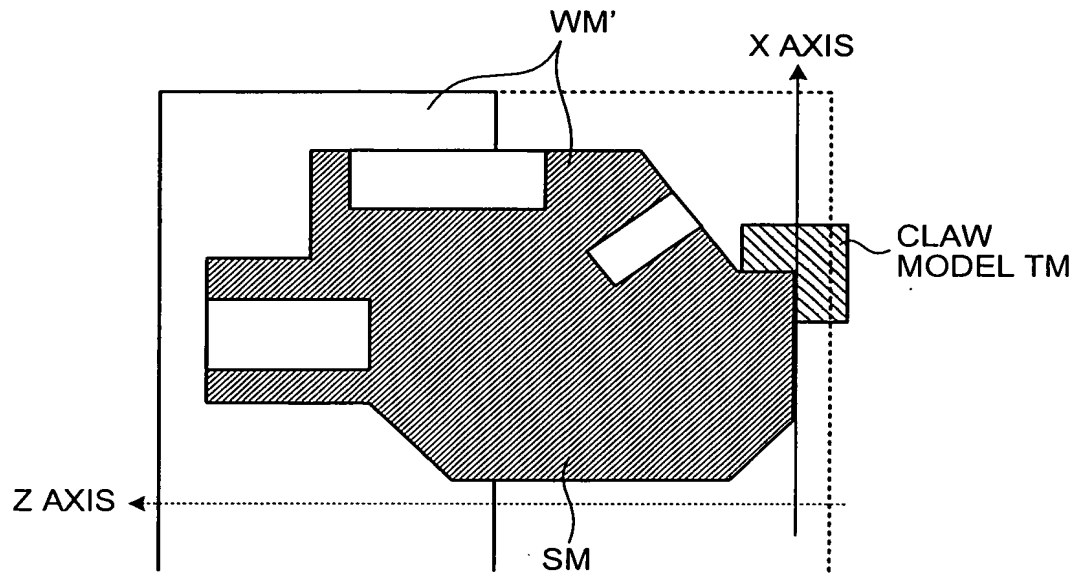
FIG.41





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FIG.43



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FIG.44A

FIG.44B

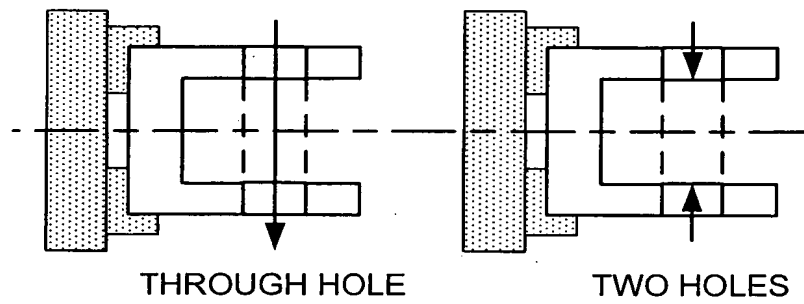
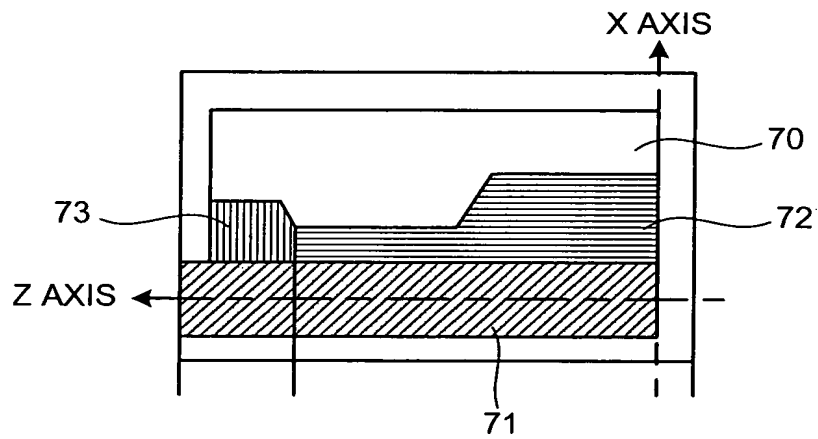


FIG.45



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FIG.46

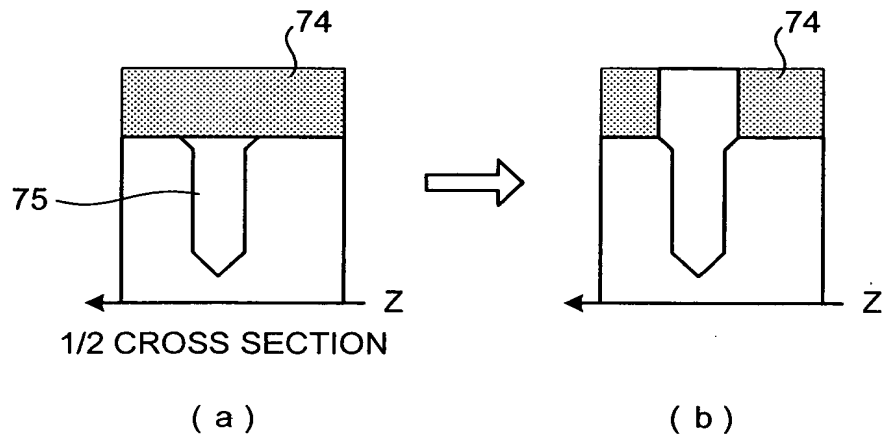


FIG.47

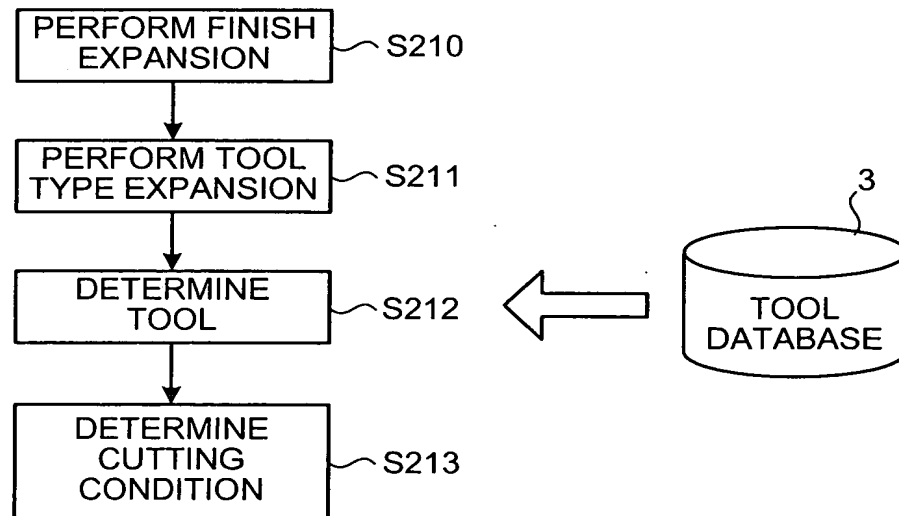
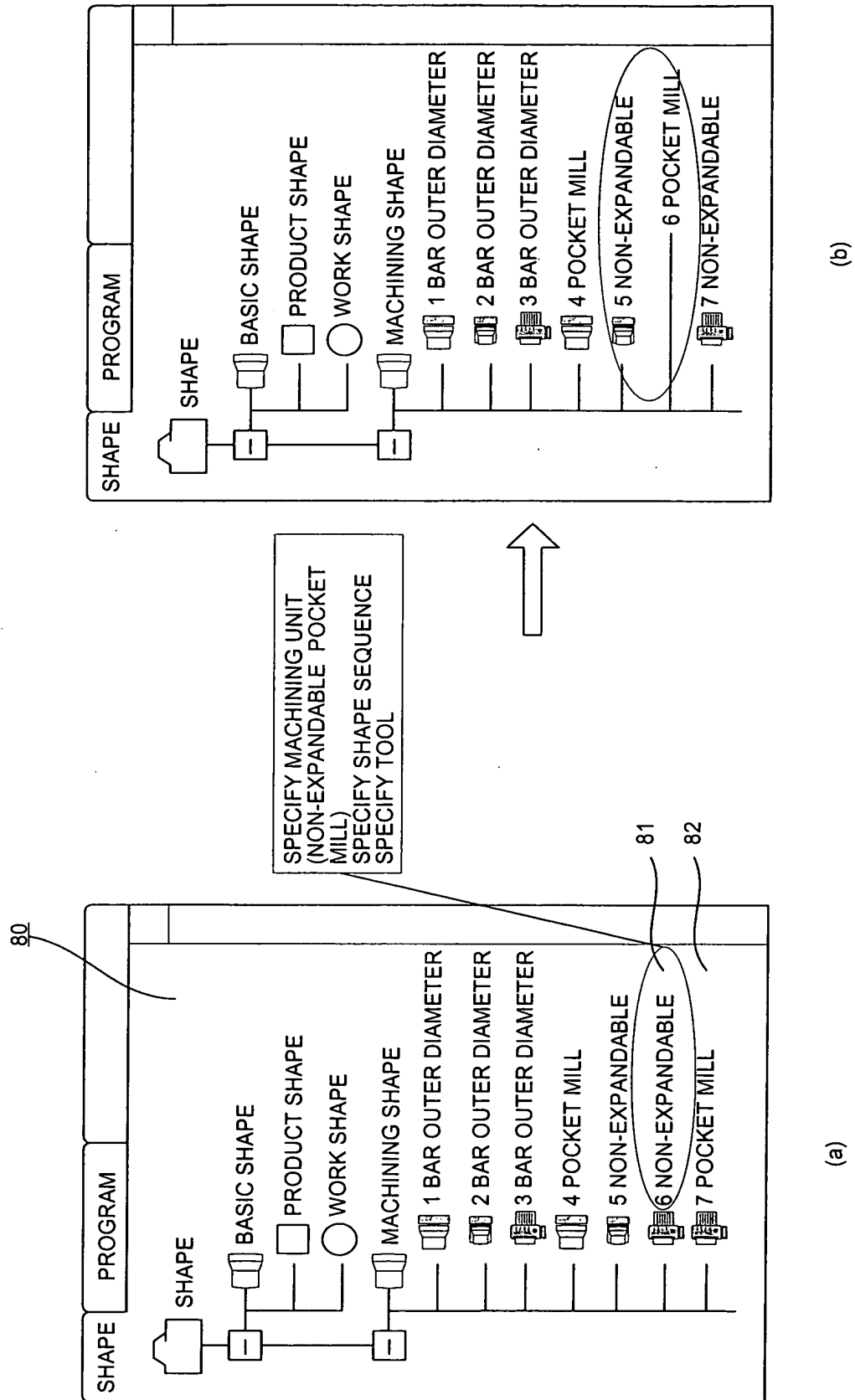


FIG.48



80
85

SHAPE
PROGRAM

PROGRAM

..... COMMON

..... 1 FACE MILL

..... **2 FACE MILL**

..... 3 FACE MILL

..... 4 FACE MILL

..... END

UNO.	UNIT MODE	ANGLE B	POSITION C	MACHINING ALLOWANCE-A	BOTTOM	WALL	AMOUNT OF FINISH-A	AMOUNT OF FINISH-R		
2	FACE MILL	ZY	90.	30.	1	◆	0.	◆		
SNO.	TOOL	NOMINAL DIAMETER	APPROACH 1	APPROACH 2	METHOD	AFD	NOTCH-A	NOTCH-R	PERIPHERAL SPEED	FEED M M
R 1 FACEMILL										
FIG	SHAPE	SURFACE SHIFT R	Z	Y	RADIUS R/Q	I	J	P	CORNER	ROUGHNESS
1	LINE	10.	0.	10.						◆
2	LINE	◆	40.	10.						◆
3	LINE	◆	40.	-10.						◆
4	LINE	◆	0.	-10.						◆
UNO.	UNIT MODE	ANGLE B	POSITION C	MACHINING ALLOWANCE-A	BOTTOM	WALL	AMOUNT OF FINISH-A	AMOUNT OF FINISH-R		
3	FACE MILL	ZY	90.	30.	1	◆	0.	◆		
SNO.	TOOL	NOMINAL DIAMETER	APPROACH 1	APPROACH 2	METHOD	AFD	NOTCH-A	NOTCH-R	PERIPHERAL SPEED	FEED M M
R 1 FACEMILL										
FIG	SHAPE	SURFACE SHIFT R	Z	Y	RADIUS R/Q	I	J	P	CORNER	ROUGHNESS
1	LINE	10.	0.	10.						◆
2	LINE	◆	40.	10.						◆
3	LINE	◆	40.	-10.						◆
4	LINE	◆	0.	-10.						◆
UNO.	UNIT MODE	ANGLE B	POSITION C	MACHINING ALLOWANCE-A	BOTTOM	WALL	AMOUNT OF FINISH-A	AMOUNT OF FINISH-R		
3	FACE MILL	ZY	90.	30.	1	◆	0.	◆		
SNO.	TOOL	NOMINAL DIAMETER	APPROACH 1	APPROACH 2	METHOD	AFD	NOTCH-A	NOTCH-R	PERIPHERAL SPEED	FEED M M

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FIG.50

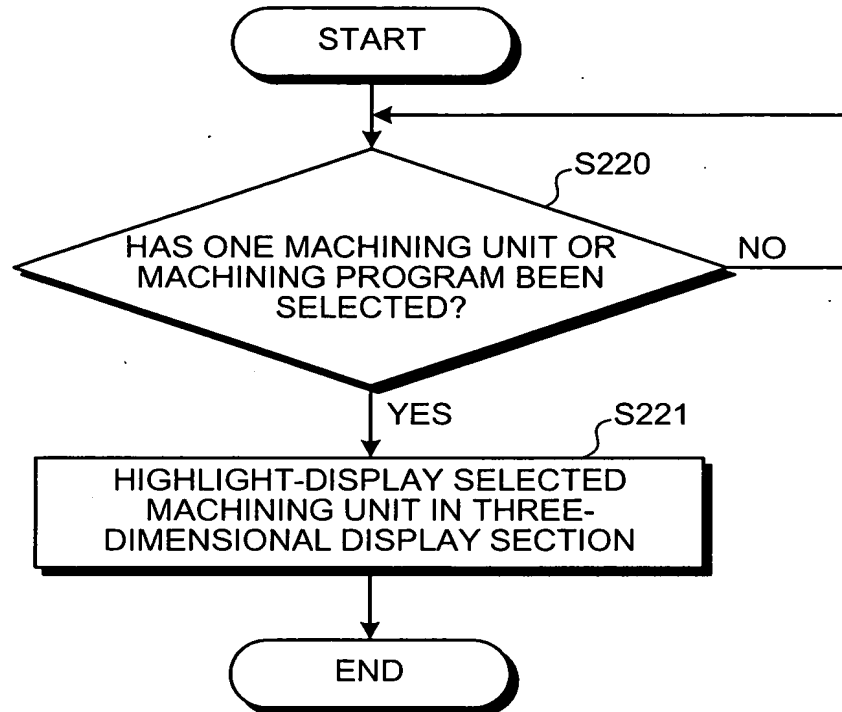


FIG.51A

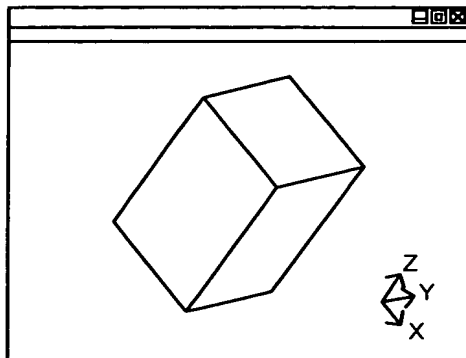
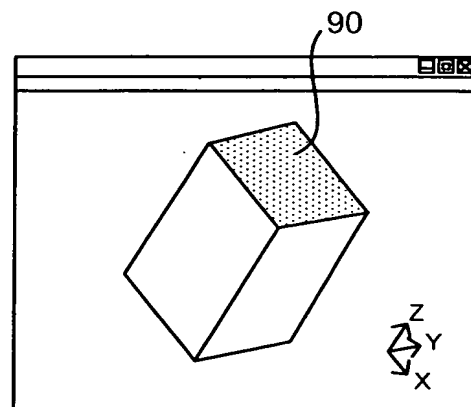
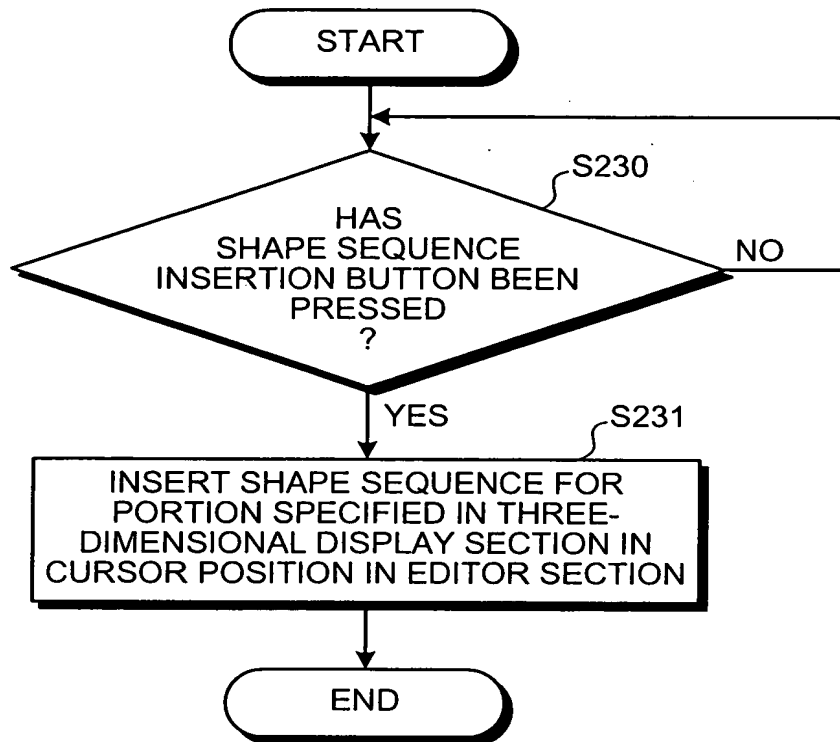


FIG.51B



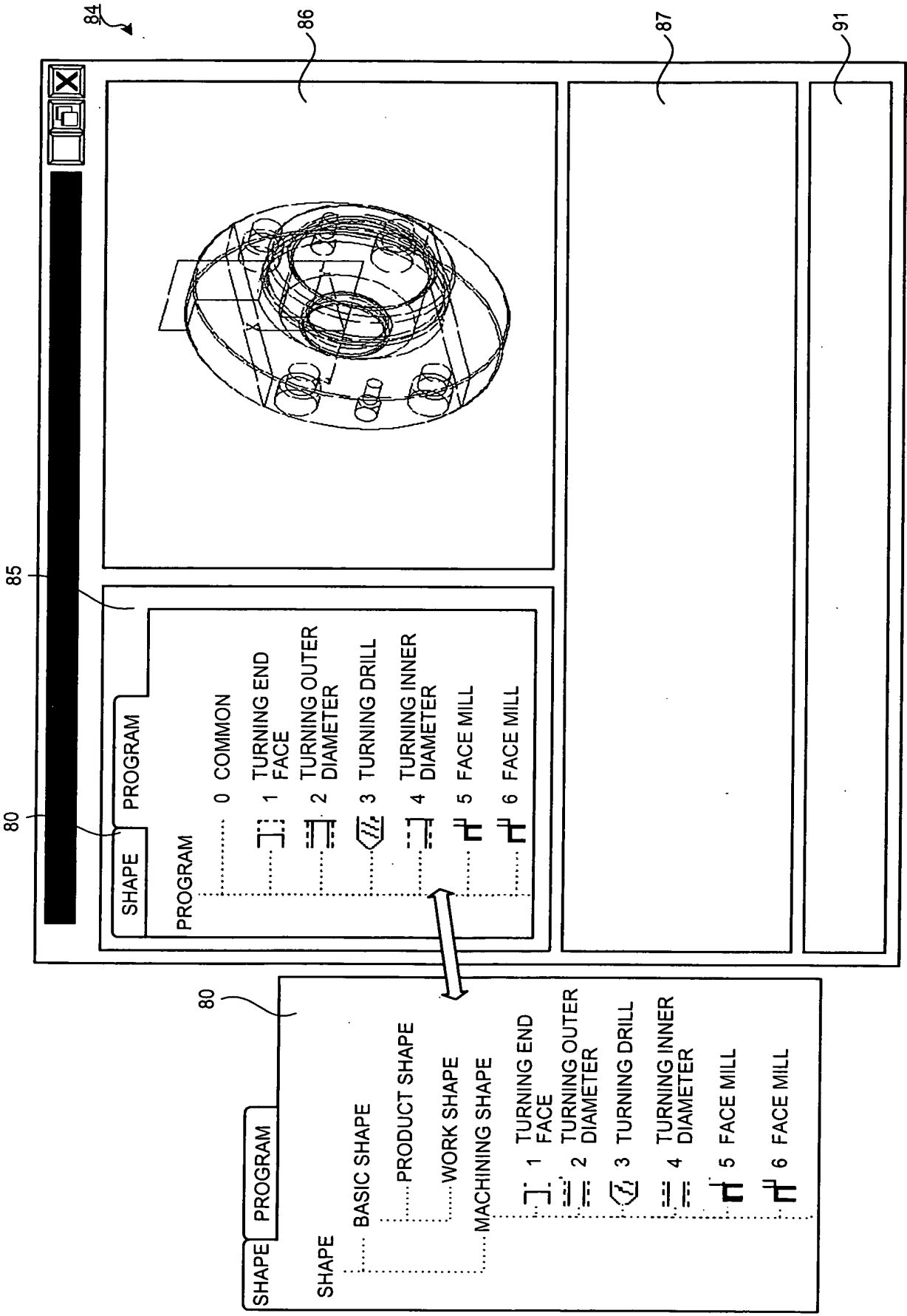
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FIG.52



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FIG. 54



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FIG.55

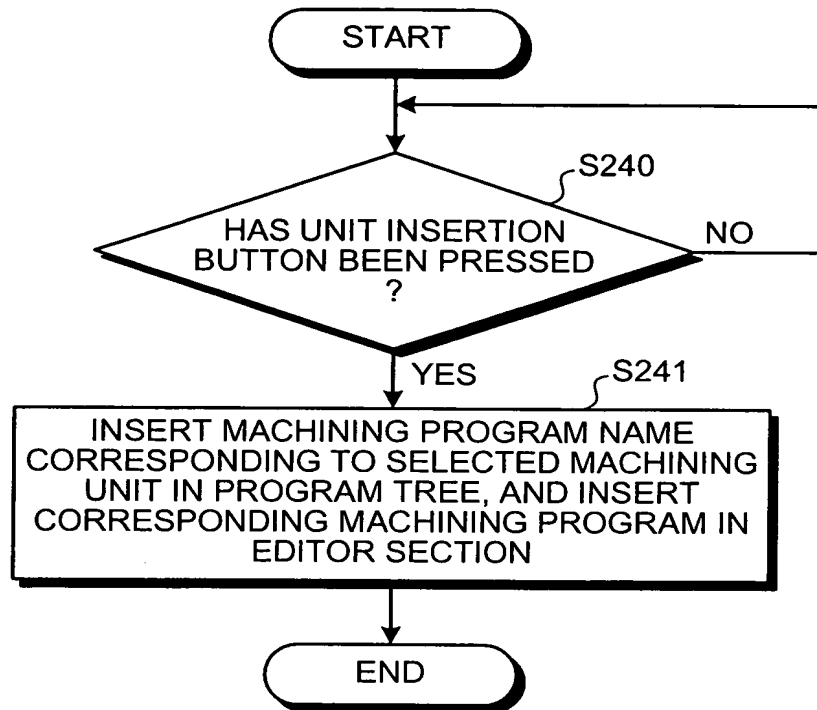
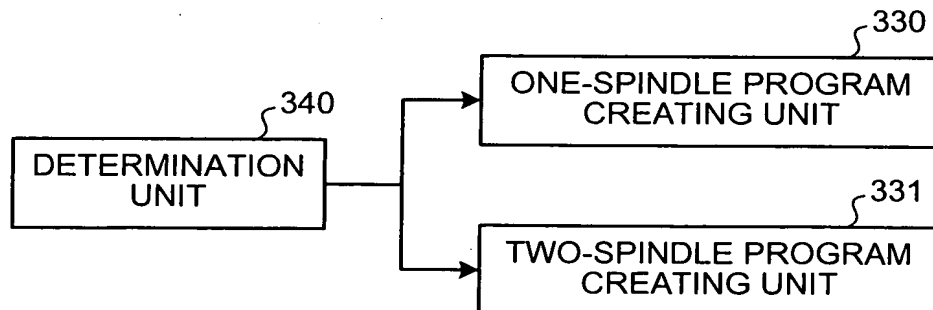


FIG.56



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FIG.57

